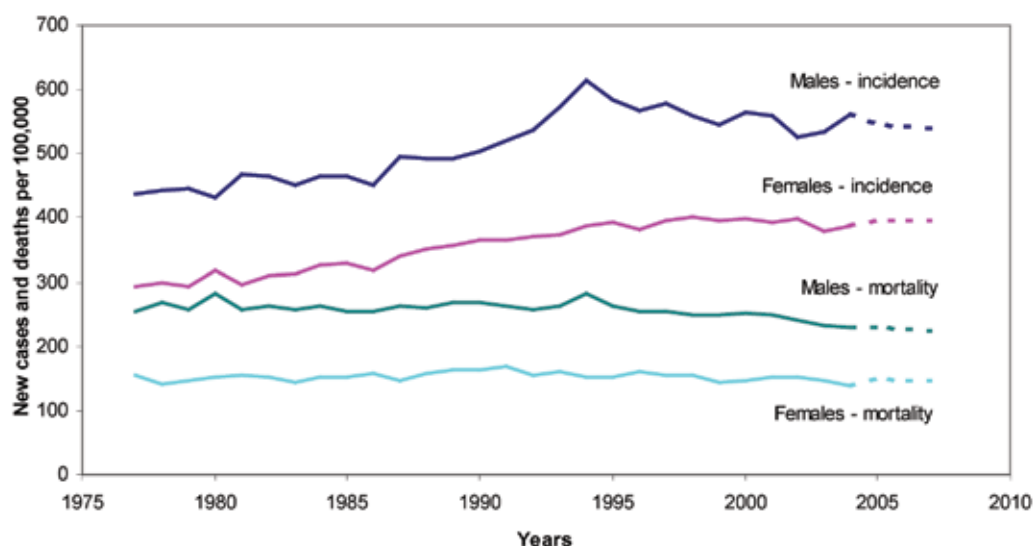


5 Trends in cancer incidence and mortality

5.1 All Cancers Combined

Cancer incidence and mortality are showing distinct trends over time in South Australia. There are encouraging signs in the age-standardised incidence rates in males and females in recent years, despite a rise in the numbers of incident cases of cancer per year since the 1970s. Male incidence rates have decreased by 0.6% per annum between 2000 and 2004, while female rates have decreased by 0.9% per annum. Despite these changes over time females are approximately 20% and 40% below their male counterparts in cancer incidence and mortality. Mortality rates in males have shown a decline of 2.5% per annum, while females have declined by 1.4% per annum.

Figure 5.1 - Trends in all cancer (excluding NMSC) incidence and mortality rates (per 100,000), South Australia, 1977-2004 with projections to 2007



Incidence

The age-adjusted (Aust. Population 2001) incidence rate for South Australia in 2004 was 560.5 new cases per 100,000 for males and 387.6 for females. In the last five 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 shown a similar decline, 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-adjusted mortality rate for South Australia was 228.4 deaths per 100,000 for males and 139.2 for females. Again, in the last five years mortality rates have decreased slightly for both males and 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 from 2005 to 2007 for all cancers and for each of the most common cancers (Tables 5.1 and 5.2 and Figures 5.2-5.5).

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 and incidence rates in males and stable rates in females. The number of new cases of cancer in males is expected to rise by 118 from 4540 in 2004 to 4658 in 2007, and by 260 from 3650 in 2004 to 3910 in 2007 in females. Cancer deaths in males are expected to increase by 111 from 1818 in 2004 to 1929 in 2007, and by 170 from 1431 in 2004 to 1601 in 2007 in females.

Table 5.1: Cancer incidence and mortality rate projections, males, 2005-2007

2004 shown for comparison

Males Site/Year	Incidence (new cases)				Mortality (deaths)			
	2004	2005	2006	2007	2004	2005	2006	2007
Prostate	161.4 (1326)	142.6 (1191)	142.7 (1221)	142.8 (1253)	28.4 (218)	35.0 (280)	35.0 (290)	35.1 (299)
Colorectal	77.8 (630)	81.8 (680)	82.4 (701)	83.1 (723)	31.7 (254)	34.0 (280)	34.1 (287)	34.1 (295)
Lung	60.3 (488)	58.2 (480)	57.0 (480)	55.9 (480)	50.1 (404)	53.0 (437)	52.3 (439)	51.5 (442)
Melanoma	47.1 (380)	44.9 (365)	44.9 (371)	44.9 (377)	5.4 (43)	6.1 (50)	6.2 (52)	6.3 (54)
NHL	23.1 (186)	24.0 (197)	24.4 (204)	24.7 (210)	8.8 (68)	10.5 (85)	10.6 (88)	10.7 (91)
All cancers	560.5 (4540)	544.7 (4498)	542.6 (4577)	540.5 (4658)	228.4 (1818)	230.6 (1888)	227.5 (1911)	224.4 (1929)

Table 5.2: Cancer incidence and mortality rate projections, females, 2005-2007

2004 shown for comparison

Females Site/Year	Incidence (new cases)				Mortality (deaths)			
	2004	2005	2006	2007	2004	2005	2006	2007
Breast	115.2 (1035)	125.1 (1136)	127.1 (1173)	129.0 (1208)	22.3 (219)	28.8 (283)	28.8 (289)	28.8 (294)
Colorectal	54.3 (544)	55.8 (574)	56.0 (588)	56.2 (602)	20.6 (220)	22.0 (238)	22.0 (243)	21.9 (248)
Melanoma	32.8 (291)	34.8 (306)	34.7 (309)	34.5 (311)	2.7 (28)	2.9 (30)	3.0 (31)	3.0 (32)
Lung	30.1 (292)	26.5 (267)	26.7 (274)	26.8 (282)	23.9 (238)	19.8 (203)	19.8 (207)	19.8 (212)
NHL	17.6 (171)	17.1 (164)	17.3 (169)	17.5 (173)	5.5 (61)	7.3 (78)	7.4 (80)	7.4 (83)
All cancers	387.6 (3650)	394.4 (3769)	394.8 (3841)	395.2 (3910)	139.2 (1431)	148.4 (1545)	148.0 (1575)	147.6 (1601)

Notes: Rates are expressed per 100,000 and standardised to the Australian 2001 population. New cases and deaths are presented in brackets.

5.2 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 trends are discussed in the following section. Figures 5.2-5.5 provide trends for some of the most common cancers shown in Tables 5.1 & 5.2.

Figure 5.2: Trends in incidence in the most common cancers in males South Australia 1977-2004

Age-adjusted to the Australian 2001 population

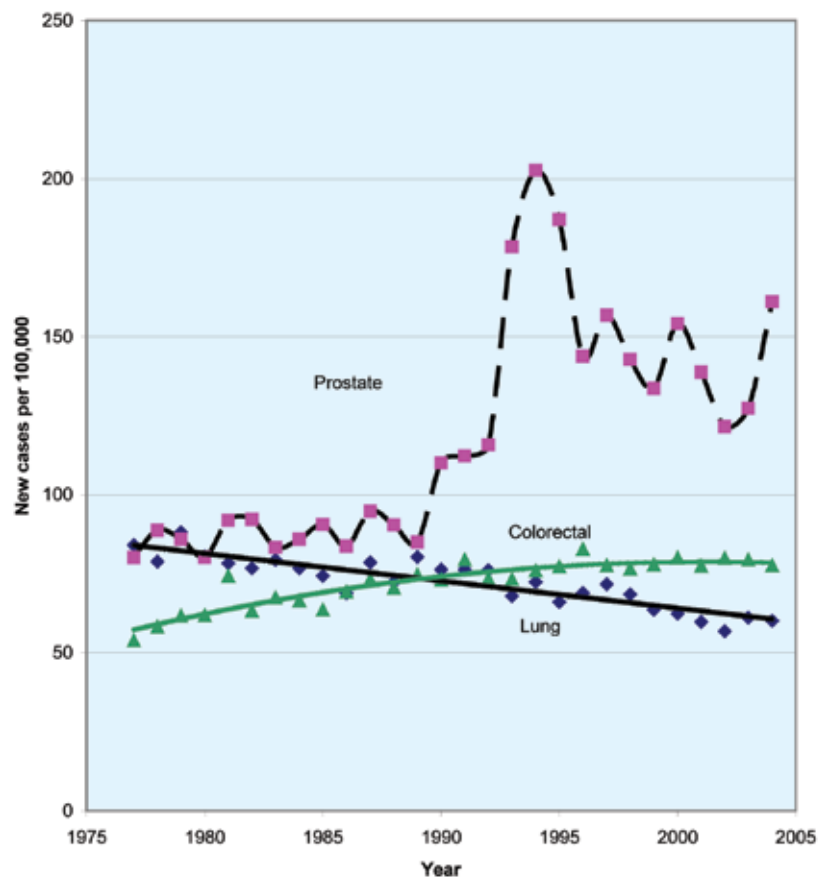
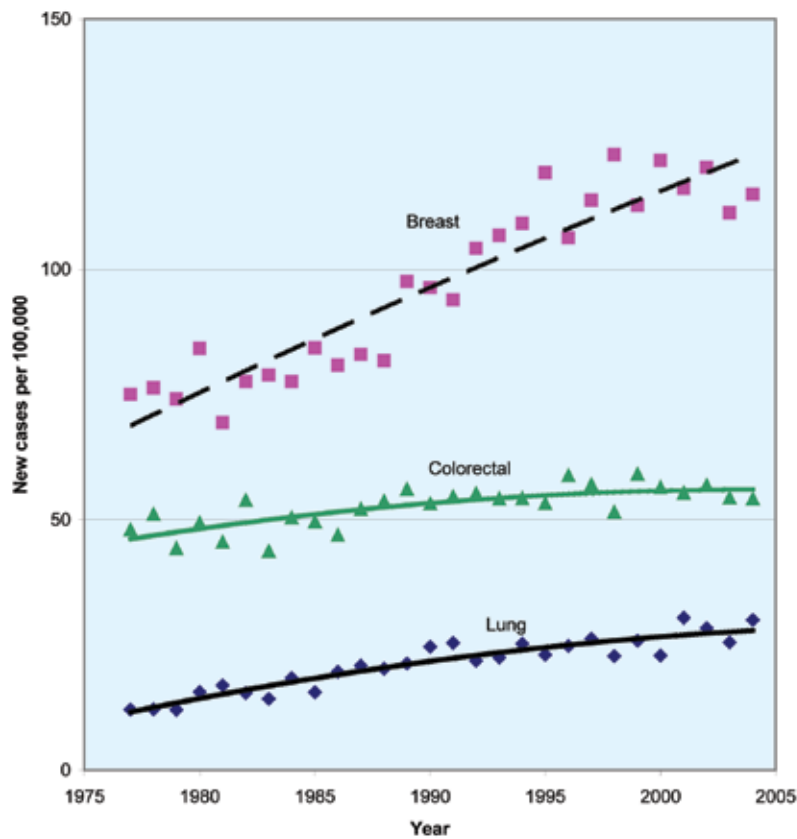


Figure 5.3: Trends in incidence in the most common cancers in females South Australia 1977-2004
Age-adjusted to the Australian 2001 population



There are a number of points of note in the four graphs presented in this section (Figs 5.2-5.5). The male incidence graph (Fig 5.2) shows the continuing highly variable nature of male prostate cancer incidence. In comparing Figures 5.2 and 5.3 it is clear how different the trends for lung cancer incidence are between males and females. Amongst females the incidence of breast cancer remains on the increase. In the mortality graphs (Figs 5.4, 5.5) there is evidence of mortality decreasing since about 1990 for female breast cancer, prostate cancer and male colorectal cancer. All of these cancers have been part of government or privately funded screening programs since the 1990s. Again, the trends for lung cancer show very different patterns for men and women. Of the major cancers shown here, female lung is the only cancer showing an increase in age adjusted mortality.

Figure 5.4: Trends in mortality in the most common cancers in males South Australia 1977-2004
 Age-adjusted to the Australian 2001 population

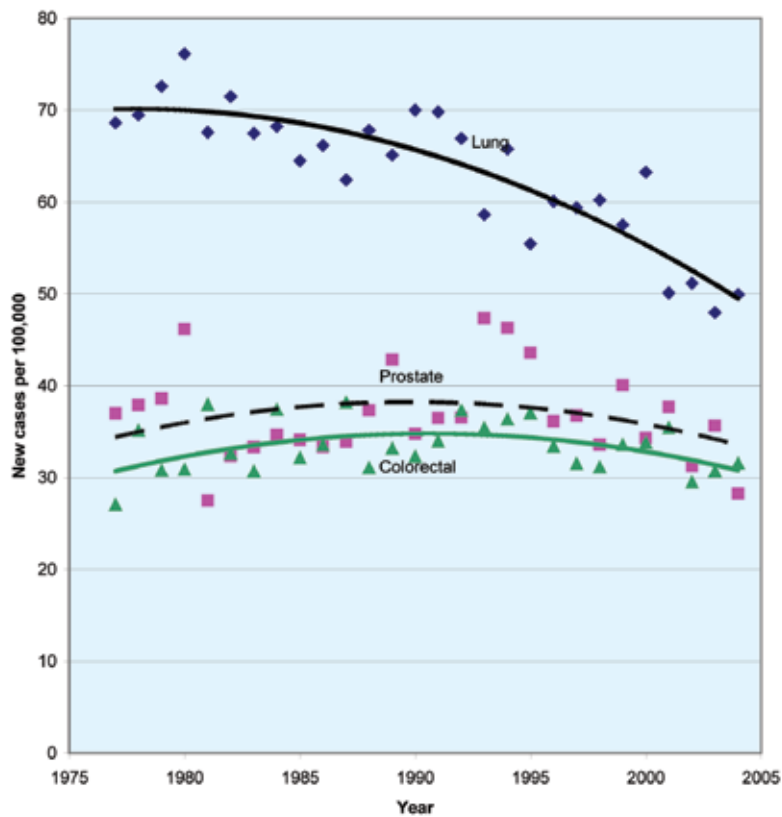
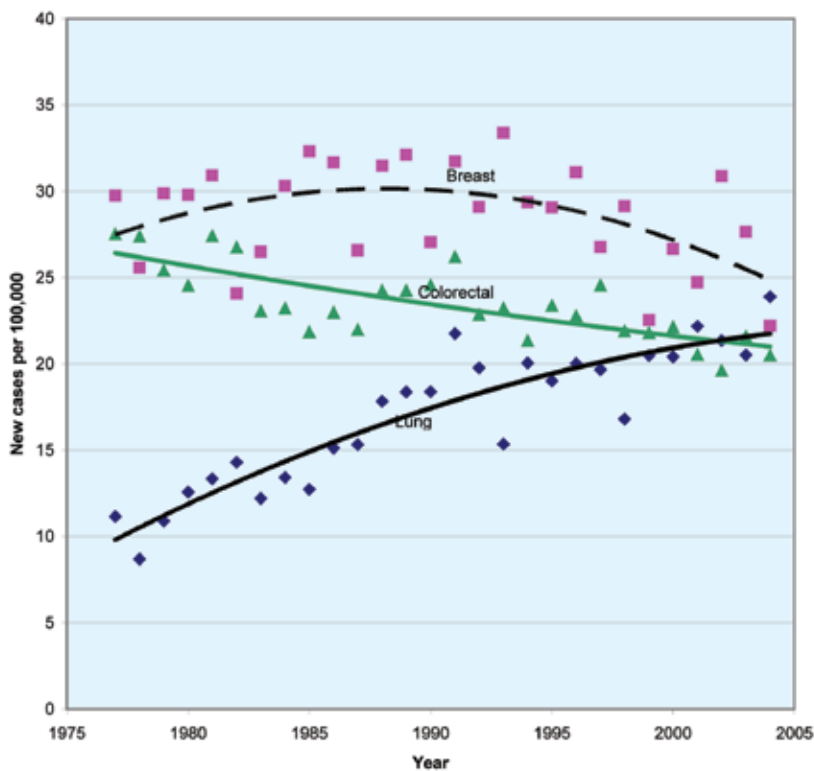


Figure 5.5: Trends in mortality in the most common cancers in females South Australia 1977-2004
 Age-adjusted to the Australian 2001 population



Summary Table 5.3 - Male incidence and mortality South Australia - 2004

Site Name	Incidence					Mortality				
	New Cases	ASR(A)	ASR(W)	Risk	% of All Cancer	Deaths	ASR(A)	ASR(W)	Risk	% of All Cancer
All Cancers	4540	560.5	402.3	1 in 3	100.0	1818	228.4	150.4	1 in 8	100.0
Lip	76	9.5	7.1	1 in 154	1.7	1	0.1	0.1	1 in 9653	0.1
Lip, & skin of lip	90	11.3	8.4	1 in 129	2.0	2	0.2	0.2	1 in 4827	0.1
Tongue	24	3.0	2.5	1 in 393	0.5	8	1.0	0.8	1 in 1176	0.4
Salivary gland	12	1.5	1.0	1 in 1019	0.3	1	0.1	0.1	1 in 7238	0.1
Gum	0	0.0	0.0	-	0.0	0	0.0	0.0	-	0.0
Floor of mouth	15	1.8	1.5	1 in 587	0.3	5	0.7	0.4	1 in 2045	0.3
Other parts of mouth	8	1.0	0.8	1 in 1516	0.2	2	0.2	0.2	1 in 4249	0.1
Buccal cavity	149	18.6	14.2	1 in 74	3.3	18	2.3	1.7	1 in 521	1.0
Oropharynx	13	1.6	1.3	1 in 639	0.3	5	0.6	0.5	1 in 3648	0.3
Nasopharynx	3	0.3	0.3	1 in 2633	0.1	1	0.1	0.1	1 in 11033	0.1
Hypopharynx	7	0.9	0.7	1 in 1372	0.2	1	0.1	0.1	1 in 9653	0.1
Unspecified oral cavity	3	0.4	0.3	1 in 2144	0.1	0	0.0	0.0	-	0.0
Oesophagus	67	8.3	5.6	1 in 197	1.5	47	5.8	3.7	1 in 395	2.6
Stomach	104	12.7	8.8	1 in 117	2.3	85	10.7	6.9	1 in 164	4.7
Small intestine	19	2.4	1.8	1 in 591	0.4	10	1.3	0.9	1 in 912	0.6
Large intestine	394	48.8	33.1	1 in 28	8.7	157	19.8	12.6	1 in 93	8.6
Rectum	236	28.8	21.4	1 in 40	5.2	97	11.8	8.5	1 in 113	5.3
Colon and rectum	630	77.6	54.5	1 in 17	13.9	254	31.6	21.1	1 in 51	14.0
Liver & intrahepatic bile ducts	65	7.9	5.9	1 in 154	1.4	42	5.1	3.7	1 in 247	2.3
Gallbladder & bile ducts	19	2.4	1.5	1 in 755	0.4	20	2.5	1.5	1 in 839	1.1
Pancreas	89	11.0	7.9	1 in 113	2.0	85	10.5	7.2	1 in 129	4.7
Unspecified digestive organs	4	0.5	0.3	1 in 2756	0.1	3	0.4	0.3	1 in 2608	0.2
Digestive organs	997	122.9	86.2	1 in 11	22.0	546	67.8	45.4	1 in 24	30.0
Nasal cavities	7	0.9	0.7	1 in 1732	0.2	3	0.4	0.3	1 in 2756	0.2
Larynx	39	4.7	3.4	1 in 263	0.9	9	1.1	0.8	1 in 1272	0.5
Trachea, bronchus & lung	488	60.1	40.5	1 in 23	10.7	404	49.9	33.3	1 in 30	22.2
Pleura	47	5.7	3.8	1 in 236	1.0	40	4.8	3.3	1 in 324	2.2
Respiratory organs	581	71.5	48.4	1 in 19	12.8	456	56.3	37.6	1 in 26	25.1
Thymus and heart	8	1.0	0.7	1 in 2325	0.2	3	0.4	0.2	1 in 9653	0.2
Bone and articular cartilage	3	0.4	0.3	1 in 5173	0.1	2	0.3	0.3	1 in 5320	0.1
Connective & other soft tissue	44	5.4	4.2	1 in 262	1.0	8	1.0	0.7	1 in 2985	0.4
Melanoma of skin	380	47.0	36.8	1 in 28	8.4	43	5.4	3.8	1 in 273	2.4
Other skin - lip & anus	19	2.4	1.7	1 in 691	0.4	1	0.1	0.1	1 in 9653	0.1
Male breast	6	0.7	0.5	1 in 1937	0.1	0	0.0	0.0	-	0.0
Prostate	1326	161.4	113.7	1 in 8	29.2	218	28.4	16.2	1 in 106	12.0
Testis	50	6.9	6.7	1 in 203	1.1	2	0.2	0.2	1 in 5295	0.1
Penis and other male genitals	8	1.0	0.6	1 in 4259	0.2	1	0.1	0.1	1 in 7238	0.1
Bladder	132	16.6	10.2	1 in 126	2.9	61	8.0	4.5	1 in 308	3.4
Kidney	149	18.2	13.7	1 in 68	3.3	65	8.0	5.9	1 in 178	3.6
Eye	10	1.2	0.9	1 in 974	0.2	3	0.3	0.3	1 in 3701	0.2
Brain	60	7.6	6.0	1 in 178	1.3	67	8.3	6.5	1 in 170	3.7
Cranial nerves	4	0.5	0.5	1 in 2748	0.1	3	0.4	0.3	1 in 10639	0.2
Thyroid gland	25	3.1	2.6	1 in 334	0.6	3	0.4	0.3	1 in 3414	0.2
Other endocrine glands	2	0.3	0.3	1 in 3264	0.0	0	0.0	0.0	-	0.0
Unspecified site	137	17.0	11.5	1 in 91	3.0	111	13.9	9.1	1 in 117	6.1
Diffuse NHL	139	17.3	12.7	1 in 94	3.1	54	7.0	4.5	1 in 309	3.0

Site Name	Incidence					Mortality				
	New Cases	ASR(A)	ASR(W)	Risk	% of All Cancer	Deaths	ASR(A)	ASR(W)	Risk	% of All Cancer
Hodgkin's disease	22	2.9	2.9	1 in 452	0.5	3	0.4	0.3	1 in 2332	0.2
Nodular lymphomas	40	4.9	4.0	1 in 208	0.9	13	1.6	1.1	1 in 1162	0.7
Other lymphomas	47	5.8	4.6	1 in 197	1.0	14	1.8	1.2	1 in 946	0.8
Tumors of histiocytic tissue	0	0.0	0.0	-	0.0	0	0.0	0.0	-	0.0
Non-Hodgkins Lymphoma	186	23.1	17.3	1 in 64	4.1	68	8.7	5.7	1 in 233	3.7
Multiple myeloma	51	6.4	4.3	1 in 245	1.1	43	5.4	3.3	1 in 378	2.4
All lymphomas	208	26.0	20.2	1 in 56	4.6	71	9.1	6.0	1 in 212	3.9
All lymphoid leukaemias	100	12.5	9.3	1 in 131	2.2	30	3.9	2.3	1 in 646	1.7
Acute lymphatic leukaemia	18	2.4	2.5	1 in 663	0.4	9	1.1	0.8	1 in 1401	0.5
Chronic lymphatic leukaemia	82	10.1	6.7	1 in 162	1.8	21	2.7	1.5	1 in 1197	1.2
Acute myeloid leukaemia	49	6.1	4.2	1 in 328	1.1	43	5.4	3.7	1 in 353	2.4
Chronic myeloid leukaemia	19	2.3	1.9	1 in 525	0.4	6	0.8	0.5	1 in 1996	0.3
All myeloid leukaemias	68	8.4	6.1	1 in 202	1.5	49	6.2	4.2	1 in 300	2.7
Chronic monocytic leukaemia	0	0.0	0.0	-	0.0	0	0.0	0.0	-	0.0
Other specified leukaemias	8	1.0	0.7	1 in 1518	0.2	7	0.9	0.5	1 in 6002	0.4
Unspecified cell leukaemias	3	0.4	0.4	1 in 2288	0.1	1	0.1	0.1	1 in 6002	0.1
All leukaemias	179	22.3	16.4	1 in 73	3.9	87	11.0	7.1	1 in 192	4.8

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 is calculated to age 75, where risk marked (-) not calculated due to unreliable calculation.

Summary Table 5.4 - Female incidence and mortality South Australia - 2004

Site Name	Incidence					Mortality				
	New Cases	ASR(A)	ASR(W)	Risk	% of All Cancer	Deaths	ASR(A)	ASR(W)	Risk	% of All Cancer
All cancers	3650	387.6	294.2	1 in 4	100.0	1431	139.2	95.1	1 in 11	100.0
Lip	24	2.4	1.7	1 in 938	0.7	0	0.0	0.0	-	0.0
Lip & skin of lip	45	4.4	3.0	1 in 503	1.2	0	0.0	0.0	-	0.0
Tongue	15	1.6	1.2	1 in 909	0.4	1	0.1	0.1	1 in 11209	0.1
Salivary gland	8	0.9	0.7	1 in 1142	0.2	1	0.1	0.1	1 in 10505	0.1
Gum	6	0.5	0.3	1 in 3396	0.2	0	0.0	0.0	-	0.0
Floor of mouth	3	0.3	0.2	1 in 5680	0.1	2	0.2	0.1	-	0.1
Other parts of mouth	6	0.6	0.4	1 in 3047	0.2	1	0.1	0.0	-	0.1
Buccal cavity	83	8.4	5.9	1 in 210	2.3	5	0.5	0.4	1 in 5423	0.3
Oropharynx	3	0.4	0.3	1 in 2340	0.1	2	0.2	0.2	1 in 3979	0.1
Nasopharynx	1	0.1	0.1	1 in 10744	0.0	0	0.0	0.0	-	0.0
Hypopharynx	0	0.0	0.0	-	0.0	1	0.1	0.1	1 in 6358	0.1
Unspecified oral cavity	2	0.2	0.1	-	0.1	2	0.1	0.1	-	0.1
Oesophagus	27	2.6	1.6	1 in 806	0.7	21	1.9	1.1	1 in 2134	1.5
Stomach	68	6.8	4.8	1 in 196	1.9	46	4.4	3.0	1 in 335	3.2
Small intestine	9	0.9	0.7	1 in 1265	0.2	5	0.6	0.4	1 in 1503	0.3
Large intestine	380	37.4	25.4	1 in 39	10.4	156	14.5	9.2	1 in 113	10.9
Rectum	164	16.9	12.2	1 in 73	4.5	64	6.0	4.0	1 in 286	4.5
Colon and rectum	544	54.2	37.6	1 in 26	14.9	220	20.5	13.2	1 in 81	15.4
Liver & intrahepatic bile ducts	22	2.0	1.3	1 in 1184	0.6	16	1.4	0.9	1 in 2169	1.1
Gallbladder & bile ducts	39	3.6	2.4	1 in 510	1.1	32	3.0	2.0	1 in 492	2.2
Pancreas	106	10.3	7.0	1 in 141	2.9	88	8.3	5.4	1 in 197	6.1
Unspecified digestive organs	23	2.5	2.0	1 in 461	0.6	12	1.2	0.9	1 in 1355	0.8

Site Name	Incidence					Mortality				
	New Cases	ASR(A)	ASR(W)	Risk	% of All Cancer	Deaths	ASR(A)	ASR(W)	Risk	% of All Cancer
Digestive organs	838	82.9	57.2	1 in 17	23.0	440	41.3	26.9	1 in 41	30.7
Nasal cavities	3	0.3	0.2	1 in 3703	0.1	1	0.1	0.0	-	0.1
Larynx	4	0.3	0.2	1 in 9820	0.1	3	0.3	0.2	1 in 2840	0.2
Trachea,bronchus & lung	292	30.0	21.5	1 in 42	8.0	238	23.9	16.8	1 in 57	16.6
Pleura	7	0.7	0.5	1 in 2348	0.2	10	0.8	0.5	1 in 4184	0.7
Respiratory organs	306	31.4	22.5	1 in 40	8.4	252	25.1	17.5	1 in 55	17.6
Thymus and heart	3	0.3	0.2	1 in 3834	0.1	0	0.0	0.0	-	0.0
Bone and articular cartilage	3	0.4	0.4	1 in 2773	0.1	1	0.1	0.2	1 in 9832	0.1
Connective & other soft tissue	28	3.2	2.8	1 in 387	0.8	13	1.2	0.8	1 in 1602	0.9
Melanoma of skin	291	32.8	26.8	1 in 40	8.0	28	2.7	1.9	1 in 567	2.0
Other skin - lip & anus	25	2.4	1.5	1 in 989	0.7	0	0.0	0.0	-	0.0
Female breast	1035	115.2	91.8	1 in 11	28.4	219	22.3	16.2	1 in 62	15.3
Cervix uteri	46	5.6	4.9	1 in 260	1.3	10	1.0	0.8	1 in 1202	0.7
Placenta	0	0.0	0.0	-	0.0	0	0.0	0.0	-	0.0
Body of the uterus	172	18.6	14.4	1 in 60	4.7	23	2.3	1.6	1 in 599	1.6
Ovary	93	9.7	7.3	1 in 120	2.5	63	6.2	4.4	1 in 233	4.4
Vagina	5	0.5	0.3	1 in 3645	0.1	5	0.5	0.3	1 in 3599	0.3
Vulva	21	2.1	1.5	1 in 639	0.6	7	0.6	0.3	-	0.5
Other female genitals	26	2.6	1.8	1 in 545	0.7	12	1.1	0.6	1 in 3609	0.8
Bladder	50	4.4	2.7	1 in 490	1.4	22	2.0	1.2	1 in 842	1.5
Kidney	87	9.2	7.0	1 in 125	2.4	30	2.9	2.0	1 in 640	2.1
Eye	6	0.7	0.6	1 in 2334	0.2	1	0.1	0.1	1 in 9820	0.1
Brain	49	5.8	5.3	1 in 216	1.3	38	4.2	3.3	1 in 304	2.7
Cranial nerves	1	0.1	0.1	1 in 5680	0.0	1	0.1	0.0	-	0.1
Thyroid gland	62	7.6	6.8	1 in 175	1.7	6	0.6	0.5	1 in 2937	0.4
Other endocrine glands	1	0.2	0.2	1 in 8609	0.0	1	0.2	0.2	1 in 8609	0.1
Unspecified site	124	11.8	7.9	1 in 138	3.4	109	10.4	7.0	1 in 154	7.6
Diffuse NHL	113	11.2	7.7	1 in 141	3.1	49	4.4	2.6	1 in 460	3.4
Hodgkin's disease	16	2.1	2.0	1 in 687	0.4	1	0.1	0.1	1 in 11209	0.1
Nodular lymphomas	52	5.8	4.6	1 in 189	1.4	11	1.0	0.7	1 in 1441	0.8
Other lymphomas	58	6.4	5.1	1 in 170	1.6	12	1.1	0.7	1 in 1441	0.8
Tumors of histiocytic tissue	0	0.0	0.0	-	0.0	0	0.0	0.0	-	0.0
Non-Hodgkins Lymphoma	171	17.6	12.8	1 in 78	4.7	61	5.5	3.3	1 in 350	4.3
Multiple myeloma	37	3.8	2.8	1 in 321	1.0	37	3.5	2.2	1 in 469	2.6
All lymphomas	187	19.7	14.8	1 in 70	5.1	62	5.6	3.5	1 in 338	4.3
All lymphoid leukaemias	55	6.0	5.0	1 in 225	1.5	18	1.8	1.3	1 in 817	1.3
Acute lymphatic leukaemia	15	2.0	2.2	1 in 686	0.4	6	0.7	0.6	1 in 2131	0.4
Chronic lymphatic leukaemia	40	4.0	2.8	1 in 334	1.1	12	1.2	0.8	1 in 1323	0.8
Acute myeloid leukaemia	42	4.3	3.1	1 in 327	1.2	29	2.8	1.9	1 in 508	2.0
Chronic myeloid leukaemia	6	0.6	0.5	1 in 2658	0.2	3	0.2	0.1	-	0.2
All myeloid leukaemias	48	4.9	3.7	1 in 291	1.3	32	3.0	2.0	1 in 508	2.2
Chronic monocytic leukaemia	1	0.1	0.0	-	0.0	0	0.0	0.0	-	0.0
Other specified leukaemias	7	0.7	0.4	1 in 2039	0.2	2	0.2	0.1	-	0.1
Unspecified cell leukaemias	1	0.1	0.0	-	0.0	1	0.1	0.0	-	0.1
All leukaemias	112	11.8	9.2	1 in 120	3.1	53	5.1	3.5	1 in 313	3.7

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 population (W).

Lifetime risk is calculated to age 75, where risk marked (-) not calculated due to unreliable calculation