9 Breast cancer in females

Disease characteristics

Breast cancer is the most commonly diagnosed cancer in Australian females after non-melanocytic skin cancer. Most breast cancers originate in the cells that line the lobules (small lobes of the breast that produce milk) and the ducts that carry the milk from the lobules (AIHW 1998b).

Breast cancers can often be felt as lumps, but most of detected lumps are not breast cancers. If the growth does prove to be a cancer, the most important factor for prognosis is the size at the time of diagnosis as smaller growths signal a lower probability of the cancer having spread to the lymph nodes and therefore a higher chance of cure.

Known risk factors account for only one-third of all breast cancers. The most important risk factors are age over 50 years; significant family history of breast cancer (first degree relative with breast cancer occurring before the age of 50 years of age or more than one relative on the same side of the family affected); and a previous history of certain benign breast diseases.

Other risk factors include: larger body size; late age for first-born child; no births; early age at onset of menstruation and late age at menopause; long-term use of hormone replacement therapy and exposure of breast tissue to ionising radiation (especially before the age of 20 years) (DHAC & AIHW 1998a).

Mammographic screening is important in detecting small breast cancers, and BreastScreen Australia (the National Breast Cancer Screening Program) currently recommends that females over the age of 50 be screened once every 2 years.

For the period 1992–1997, the proportion of those with breast cancer that survived for at least one years after diagnosis was 96%, and 84% survived for at least five years. An estimated 1 in 48 women will die of breast cancer before age 75. Females diagnosed with breast cancer while aged in their 40s had a better survival rate than those in any other age group, and females in their 80s and 90s had the worst survival rate (AIHW, AACR & NHMRC 1998). It is estimated that there are about 30,000 PYLL before the age of 75 each year, making breast cancer the leading cause of premature death for females in Australia.

Historic view

In 1998, there were 2,568 deaths of females due to breast cancer (232 deaths per million population). In 1907 the mortality rate for breast cancer was 189 deaths per million population with 193 deaths. This rate increased to 302 deaths per million population by 1943, and there were minor fluctuations in the rates between 1943 and 1985. Since 1985 the overall rate has declined by 1.0% per annum, and the fall has been more pronounced since 1993, with the mortality rate falling by 3.0% per year (Figure 9.1). The mortality rate for breast cancer is expected to continue declining over the next 10 to 20 years because of public health initiatives such as screening followed by appropriate medical intervention.

It is important to note that breast cancer mortality rates are decreasing despite increasing incidence rates. While part of the sharp increase in incidence between 1992–1994

corresponds to the introduction of the national screening program in 1991, there is evidence of an increase in the underlying incidence rate as well (AIHW 2000b).

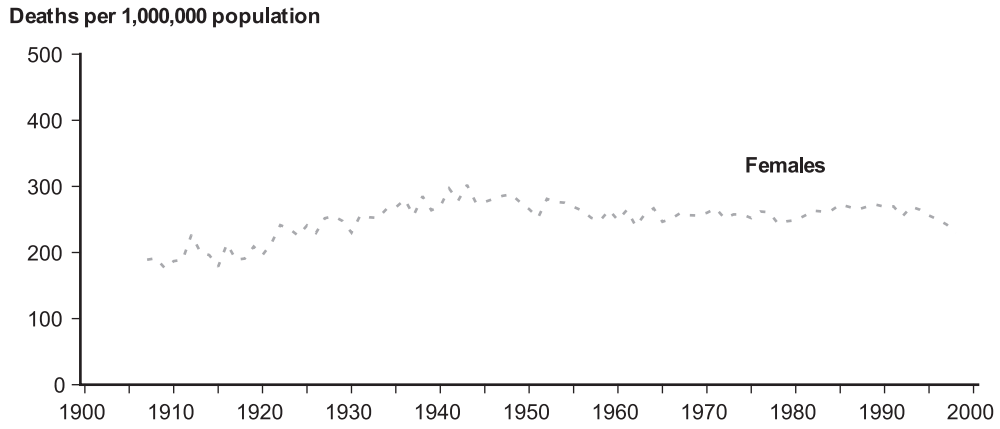


Figure 9.1: Age-standardised mortality rates for female breast cancer, Australia, 1907–1998

Age distribution

Breast cancer is the most common cause of cancer death for women, comprising 17% of all female cancer deaths in 1998. Four per cent of deaths in women are due to breast cancer. The risk of death from breast cancer begins to increase more markedly from about age 40, with 63% of deaths occurring after the age of 60 and 33% occurring after age 75 (Table 9.1).

Twelve-year trends 1987–1998

For the period 1987–1993, mortality rates fluctuated slightly, but since 1993 there has been a slight but consistent decline. The mortality rate for females in 1998 was 232 deaths per million population (Table 9.1, Figure 9.2). Over the 1987–1998 period, mortality rates decreased significantly by 6.1% per year.

Geographic differences in mortality

As discussed in Chapter 4, geographic differences are a complex interplay of many factors including socioeconomic status, occupational and environmental risk, migrant population, Aboriginal and Torres Strait Islander population, and proportion of the population living in rural and remote areas. Areas with a higher proportion of Aboriginal and Torres Strait Islander people will have higher mortality rates because of the higher mortality rates experienced by the Aboriginal and Torres Strait Islander population. Some of these factors are discussed separately below.

State and Territory comparison

Breast cancer mortality rates decreased in all States and Territories except Western Australia between the two periods (1987–1991 and 1994–1998) (Table 9.2). The mortality rates for breast cancer in females showed some variation among the States and Territories. During the 1987–1991 period, compared with the national breast cancer mortality rates:

- The mortality rate due to breast cancer was significantly higher in Victoria.
- Mortality rates due to breast cancer were significantly lower in Queensland and Western Australia.

During the 1994–1998 period:

- The mortality rate was significantly higher in Victoria.
- The mortality rate was significantly lower in the Northern Territory.

Geographic category (by metropolitan, rural and remote area)

The mortality rates from breast cancer did not vary significantly between geographic areas: the rate was highest for females living in metropolitan areas (252 deaths per million population) and lowest for those living in remote areas (231) (Table 9.3).

Country of birth

For the period 1992–1994, the world-standardised mortality rate for breast cancer for Australian females born in Australia was 204 deaths per million population (Table 9.5).

- The mortality rates for Australian females born in Korea, Japan, China, Singapore and Greece were significantly lower than for Australian females born in Australia.
- The mortality rate for Australian females born in the United Kingdom and Ireland was significantly higher than for Australian females born in Australia.

International comparisons

The Australian mortality rate for breast cancer in females is 141 deaths per million population and similar to those for the USA, Austria, Canada, Germany, Switzerland, France and Italy. The Netherlands and the United Kingdom and Ireland have rates 1.3 times the Australian rate for females, while Greece and Poland have rates about 0.8 times the Australian rate for females (see Tables C.2 & C.3 in Appendix C).

Socioeconomic status

In contrast to patterns for most diseases, breast cancer mortality rates were greatest in the higher socioeconomic status groups, using the SEIFA Index of Relative Socioeconomic Disadvantage (see Appendix D), although the difference between the groups was not statistically significant (Table 9.4).

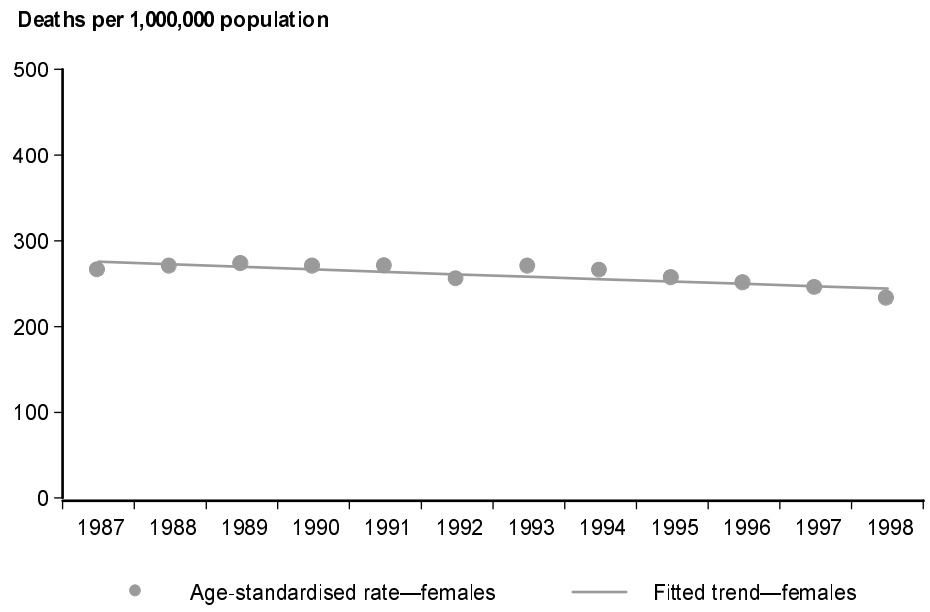
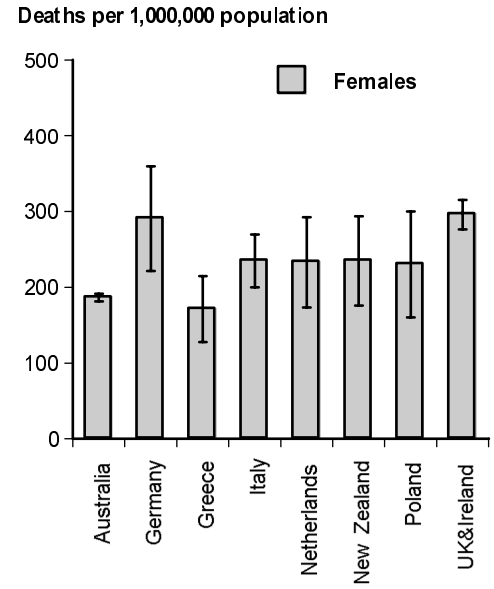


Figure 9.2: Age-standardised mortality rates and fitted trend for female breast cancer, Australia, 1987–1998



Note: Bars on graphs represent 95% confidence intervals.

Figure 9.3: Age-standardised mortality rates for female breast cancer by country of birth and sex, Australia, 1992–1994

Table 9.1: Age-specific and age-standardised mortality rates for female breast cancer per million population, Australia, 1987–1998

	Age																		ASMR
Year	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+	Crude rate	Aust 1991
1987	0	0	0	0	3	15	48	123	235	313	571	678	747	819	981	1,182	1,365	2,274	277	265
1988	0	0	0	0	0	7	41	106	214	356	546	668	803	899	957	1,258	1,457	2,274	283	269
1989	0	0	0	0	2	10	52	105	235	379	555	612	791	884	963	1,238	1,562	2,354	288	272
1990	0	0	0	0	0	8	39	97	246	357	581	610	777	961	972	1,174	1,500	2,112	286	269
1991	0	0	0	0	3	17	37	122	239	360	574	647	711	888	1,102	1,126	1,479	2,127	290	270
1992	0	0	0	0	1	6	47	120	217	371	509	609	660	788	1,002	1,131	1,433	2,179	278	254
1993	0	2	0	0	0	3	55	109	182	360	530	684	784	906	886	1,322	1,655	2,241	298	269
1994	0	0	0	0	1	3	26	128	216	361	539	659	748	835	990	1,229	1,525	2,172	296	265
1995	0	0	0	0	1	7	36	81	183	342	475	640	765	912	910	1,230	1,531	2,129	290	256
1996	0	0	0	0	0	13	40	126	205	302	472	601	737	832	923	1,169	1,455	1,970	285	250
1997	0	0	0	0	1	8	52	115	197	333	512	573	665	821	923	1,118	1,388	1,788	282	244
1998	0	0	0	0	3	10	40	92	184	320	469	536	699	727	821	1,135	1,308	1,942	273	232

Note: ASMR = age-standardised mortality rate.

Table 9.2: Number of deaths and age-standardised mortality rates for female breast cancer per million population, States and Territories, 1987–1991 and 1994–1998

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Deaths				
1987–1991	4,279	3,422	1,720	983	1,082	328	152	33	11,999
1994–1998	4,441	3,635	2,144	1,133	1,207	326	181	36	13,051
					Deaths per million population				
1987–1991	270	296	241	241	288	266	305	206	269
1994–1998	243	274	237	243	260	230	278	177	248
					Confidence intervals (95%)				
1987–1991	262–278	286–306	229–252	226–257	271–305	237–295	255–355	125–286	264–274
1994–1998	235–250	265–283	227–247	228–257	245–275	204–255	237–320	112–242	244–252

Table 9.3: Age-standardised mortality rates for female breast cancer per million population, by geographic area, 1995–1997

Geographic area	Females	
	ASMR	95% confidence interval
Metropolitan	252	246–259
Rural	246	235–256
Remote	231	190–271

Note: ASMR = age-standardised mortality rate
Source: AIHW Mortality Database, based on *Statistical Local Area* resident population estimates compiled by the ABS.

Table 9.4: Age-standardised mortality rates for female breast cancer per million population, by socioeconomic status, 1995–1997

	Females	
SEIFA quintile	ASMR	95% confidence interval
1 High SES	259	246–271
2	272	258–285
3	244	232–257
4	235	222–247
5 Low SES	240	228–252

Notes
1. ASMR = age-standardised mortality rate; SES = socioeconomic status.
2. A description of the SEIFA Index of Relative Socioeconomic Disadvantage may be found in Appendix D.

Source: AIHW Mortality Database, based on *Statistical Local Area* resident population estimates compiled by the ABS.

Table 9.5: Age-standardised mortality rates per million population for female breast cancer, Australians by birthplace, 1992–1994

Country of birth	ASMR (world)	95% CI
Israel	359	29–688
Hungary	281	166–396
Mauritius	236	93–378
France	233	78–389
Germany	228	181–274
United Kingdom and Ireland	227	212–243
Australia	**204**	**198–210**
Portugal	201	26–375
USA	191	83–299
Italy	184	156–213
Switzerland	183	3–363
Malta	180	114–246
New Zealand	178	134–222
Netherlands	175	132–219
Poland	171	115–228
Finland	155	2–309
Canada	148	12–285
Greece	142	108–176
Austria	138	62–213
Chile	134	12–256
Hong Kong and Macau	108	16–200
China	85	45–125
Singapore	77	0–173
Japan	59	0–147
Korea	57	0–137

Notes

1. ASMR = age-standardised mortality rate; CI = confidence interval.
2. Age-standardised mortality rates have been standardised to the World Standard Population.