

## 5 Prevalence of breast cancer

How many people alive in Australia today have had breast cancer? The answer to this question provides us with information on the prevalence of breast cancer. Prevalence (or complete prevalence as it is sometimes called) is defined as the number of people alive at a specified point in time who have ever been diagnosed with breast cancer regardless of how long ago. These people may or may not be undergoing treatment or be considered 'cured'.

Rather than include all people alive who have ever been diagnosed with breast cancer, 'limited-duration prevalence' provides information on the number of people alive who were diagnosed with breast cancer within a specified time period, such as the previous 1 or 5 years. One-year prevalence data, for example, would indicate the number of people alive on 31 December of a particular year who were diagnosed with breast cancer during that same year, while 5-year prevalence data would indicate the number of people alive on 31 December of a specified year who were diagnosed with breast cancer within the previous 5 years.

The prevalence of a disease in a given population is influenced by the incidence of the disease, survival from the disease and the age at which people are diagnosed (i.e. older people are more likely to die sooner due to age-related morbidity and frailty).

Along with information on incidence, mortality and survival (as discussed in earlier chapters), prevalence is another indicator of the burden of breast cancer in our society, both at the personal/familial level and societal level (particularly in terms of health-care services). While health-care needs can vary widely from one person to the next over the years following diagnosis, different types and intensities of health-care services may be required by those who were diagnosed with breast cancer recently (e.g. in the past year) compared with those diagnosed many years previously.

In Australia, as elsewhere, complete prevalence data are not available through cancer registry data collections since collections do not hold data for a long-enough period. The only source of complete prevalence data in Australia is surveys, such as the National Health Survey, where prevalence estimates are based on self-reported information of a sample of Australians (ABS 2009c). However, since the National Health Survey excludes people in hospitals, hospices, and nursing and convalescent homes, those data are incomplete. An additional deficiency of those data is the likelihood of the erroneous self-reporting of benign tumours or other non-invasive lesions as invasive breast cancer.

In this report, limited-duration prevalence is presented using data from the Australian Cancer Database (ACD), with information on deaths (from any cause) sourced from the National Death Index. Since national incidence data on breast cancer data are available from 1982 onwards, limited-duration prevalence data can be presented for a maximum of 25 years (from 1 January 1982 to 31 December 2006). In addition, information is provided in this chapter on differences in prevalence by age, geographical area and country of birth. Information on the prevalence of breast cancer for males is also presented.

In this chapter, no international comparisons are made. Making such comparisons is very difficult since prevalence data from other countries often differ from Australian data not only by the years to which they apply, but also by the number of years considered (e.g. 5, 10, 25 years) and the methods employed. In addition, some prevalence data – such as the GLOBOCAN data (Ferlay et al. 2004) – are presented as *counts* of persons rather than as

*proportions* of all females alive at a specified time. Locating the relevant population data for each country and then calculating the prevalence proportions from such data are beyond the scope of this report.

Note that unlike incidence data, which pertain to the number of *cases* of breast cancer, the prevalence data presented in this report pertain to the number of *people* who have been diagnosed with breast cancer and are still alive. As mentioned in Chapter 2, since it is very rare that any one person would be diagnosed with more than one primary breast cancer during a 1-year period, the number of *cases* of breast cancer for a particular year would be very similar to the number of *people* diagnosed with breast cancer in that year.

## Prevalence of breast cancer among females

### Prevalence in 2006

Of all females alive at the end of 2006, almost 144,000 had been diagnosed with breast cancer in the previous 25 years (Table 5.1). This equates to 1.4% of women. Meanwhile, the 20-year prevalence was over 136,000 women, the 10-year prevalence was approximately 95,000 women and the 1-year prevalence was 12,284 women. This latter figure compares with an *incidence* rate for 2006 of 12,614 cases (Table 2.1). Note that those women who were both diagnosed with breast cancer and died in 2006 (approximately 330 women) may or may not have died as a result of breast cancer.

**Table 5.1: Limited-duration prevalence of breast cancer, females, end of 2006**

Time period	Number <sup>(a)</sup>	Per cent of population <sup>(b)</sup>
1-year prevalence	12,284	0.1
5-year prevalence	54,923	0.5
10-year prevalence	95,046	0.9
15-year prevalence	121,629	1.2
20-year prevalence	136,220	1.3
25-year prevalence	143,967	1.4

(a) Refers to the number of *females*, not *cases*, diagnosed with breast cancer.

(b) Based on the number of females in the Australian population at 31 December 2006.

Source: Australian Cancer Database, AIHW.

In order to compare prevalence across commonly diagnosed cancers in females, data from AIHW's 2008 publication on cancer survival and prevalence (AIHW, CA & AACR 2008) are shown in Table 5.2. When the 2008 report was prepared, the most recent national cancer data was for 2004 and thus 23 years of cancer incidence data were available.

Regardless of prevalence duration, breast cancer stood out as the most prevalent type of cancer among women (excluding non-melanoma skin cancer). For example, of all females alive at the end of 2004, almost 130,000 of them had been diagnosed with breast cancer in the previous 23 years. The second most prevalent form of reportable cancer among females over the 23-year period was melanoma of the skin (56,235), followed by bowel cancer (43,286). Likewise, when the 1-, 5- and 10-year prevalence data were considered, the most prevalent type of cancer among females was breast cancer (excluding non-melanoma skin cancer).

**Table 5.2: Limited-duration prevalence<sup>(a)</sup> of the five most commonly diagnosed cancers<sup>(b)</sup>, females, end of 2004**

Cancer type (ICD-10 codes)	1-year prevalence	5-year prevalence	10-year prevalence	23-year prevalence
Breast (C50)	11,764	53,051	89,777	129,438
Bowel (C18–C20)	4,969	18,940	29,929	43,286
Melanoma of skin (C43)	4,151	18,697	33,303	56,235
Lung (C33–C34)	1,978	4,413	5,657	6,817
Lymphoma (C81–C85, C96)	1,644	6,516	10,434	14,581
<b>All cancers<sup>(c)</sup></b>	<b>36,331</b>	<b>141,553</b>	<b>230,245</b>	<b>338,692</b>

(a) Data refer to the number of *females*, not cases, diagnosed with cancer.

(b) Excluding non-melanoma skin cancer (C44).

(c) Includes cancers coded in the International Statistical Classification of Diseases and Related Health Problems, 10th revision (ICD-10) as C00–C97 (except for C44), D45, D46, D47.1 and D47.3.

Source: AIHW, CA & AACR 2008.

The high prevalence of breast cancer among females, compared with other commonly diagnosed cancers, is due to a number of factors including:

- the large number of women diagnosed with breast cancer each year (see Chapter 2)
- high survival for those diagnosed with breast cancer compared with other cancers; for example, in 1998 to 2004, 5-year relative survival was 88% for women with breast cancer compared with 62% for their counterparts with bowel cancer and 14% for those with lung cancer (AIHW, CA & AACR 2008)
- the younger average age at diagnosis of women with breast cancer compared with many other types of cancers; for example, in 2004, the mean age at diagnosis of women was 60 years for breast cancer (Table 2.2) compared with 70 years for lung cancer and 71 years for bowel cancer (AIHW 2007).

## Differences by age

Table 5.3 presents 25-year prevalence of breast cancer by age group. At the end of 2006, there were just over 40,000 women in the 60 to 69 year age group who had been diagnosed with breast cancer in the previous 25 years. This equates to 4 out of 100 women in this age group.

**Table 5.3: Twenty-five-year prevalence of breast cancer by age group, females, end of 2006**

Age group (years)	Number <sup>(a)</sup>	Per cent of population <sup>(b)</sup>
<30	169	0.0
30–39	2,628	0.2
40–49	14,434	0.9
50–59	33,793	2.5
60–69	40,204	4.4
70–79	30,127	4.8
80+	22,612	4.9
<b>Total</b>	<b>143,967</b>	<b>1.4</b>

(a) Refers to the number of *females*, not cases, diagnosed with breast cancer.

(b) Based on the number of females in the Australian population at 31 December 2006.

Source: Australian Cancer Database, AIHW.

In addition, there were over 30,000 women diagnosed with breast cancer in the previous 25 years in both the 50 to 59 year age group and the 70 to 79 year age group. When the total number of women in these age groups is considered, the data indicate that 3% of women in the 50 to 59 year age group and 5% of those in the 70 to 79 year age group had a breast cancer diagnosis at some point in the previous 25 years. In addition, 5% of those in the 80 years and over age group had been diagnosed with breast cancer in the 25-year period.

## Differences across groups

As noted earlier in this chapter, the prevalence of breast cancer is influenced by the incidence of the disease, survival rates and the average age at diagnosis. Since these factors differ across subgroups (e.g. higher incidence in certain states and territories), prevalence is also expected to differ. In this section of the report, prevalence data by state and territory, and country of birth are presented.

## Differences by geographical area

Table 5.4 presents prevalence data for the end of 2006 according to the state and territory in which the woman lived at the time of diagnosis. Since it is unknown whether the women lived in the same state and territory in 2006 as they did at the time of diagnosis, these data should be used with caution. The 25-year prevalence data indicate that about 49,100 women had been diagnosed with breast cancer in New South Wales during 1982 to 2006 and were alive at the end of 2006, with the corresponding figures for Victoria being almost 36,200 and for Queensland, almost 26,200.

**Table 5.4: Limited-duration prevalence<sup>(a)</sup> by state and territory of diagnosis, females, end of 2006**

State or territory	1-year prevalence	5-year prevalence	10-year prevalence	25-year prevalence
New South Wales	4,000	18,404	32,003	49,106
Victoria	3,065	13,444	23,474	36,181
Queensland	2,418	10,491	17,930	26,186
Western Australia	1,220	5,355	9,129	13,618
South Australia	1,023	4,580	8,072	12,337
Tasmania	294	1,440	2,365	3,513
Australian Capital Territory	203	938	1,605	2,359
Northern Territory	61	271	468	667
<b>Total</b>	<b>12,284</b>	<b>54,923</b>	<b>95,046</b>	<b>143,967</b>

(a) Data refer to the number of *females*, not *cases*, diagnosed with breast cancer.

Source: Australian Cancer Database, AIHW.

## Differences by country of birth

Prevalence of breast cancer among women in Australia according to their country or region of birth is shown in Table 5.5. The 25-year prevalence data indicate that there was a relatively high proportion of women alive who had been diagnosed with breast cancer in the period from 1982 to 2006 among women born in 'North-West Europe excluding the UK and Ireland' (2.5% of the female population born in this region), the UK and Ireland (2.4%) and Southern and Eastern Europe (2.1%). Meanwhile, the lowest 25-year prevalence, as a proportion of the

**Table 5.5: Limited-duration prevalence<sup>(a)</sup> by country/region of birth<sup>(b)</sup>, females, end of 2006**

Country/region of birth <sup>(b)</sup>	1-year		5-year		10-year		25-year	
	Prevalence	Per cent of population <sup>(c)</sup>	Prevalence	Per cent of population <sup>(c)</sup>	Prevalence	Per cent of population <sup>(c)</sup>	Prevalence	Per cent of population <sup>(c)</sup>
Australia	7,313	0.1	34,982	0.4	61,230	0.8	92,579	1.2
New Zealand (NZ)	222	0.1	1,035	0.5	1,744	0.8	2,474	1.1
Oceania and Antarctica, excl. Australia and NZ	69	0.1	304	0.5	486	0.7	685	1.0
United Kingdom (UK) and Ireland	1,068	0.2	5,135	0.9	9,280	1.6	14,454	2.4
North-West Europe excluding UK and Ireland	282	0.2	1,432	0.9	2,514	1.6	3,919	2.5
Southern and Eastern Europe	645	0.2	3,090	0.7	5,627	1.3	8,969	2.1
North Africa and the Middle East	147	0.1	720	0.5	1,152	0.8	1,630	1.2
South-East Asia	251	0.1	1,312	0.4	2,136	0.6	2,869	0.8
North-East Asia	156	0.1	720	0.3	1,162	0.5	1,620	0.6
Southern and Central Asia	118	0.1	487	0.3	837	0.6	1,207	0.8
Sub-Saharan Africa	99	0.1	432	0.4	713	0.7	1,010	0.9
United States of America (USA) and Canada	66	0.1	292	0.5	481	0.9	701	1.3
Americas excluding USA and Canada	51	0.1	232	0.4	375	0.7	580	1.1
Inadequately described, not stated or unknown	1,797	..	4,750	..	7,309	..	11,270	..
<b>Total</b>	<b>12,284</b>	<b>0.1</b>	<b>54,923</b>	<b>0.5</b>	<b>95,046</b>	<b>0.9</b>	<b>143,967</b>	<b>1.4</b>

(a) Data refer to the number of females, not cases, diagnosed with breast cancer.

(b) Country of birth is classified according to the Standard Australian Classification of Countries, 2nd edition (ABS 2008c).

(c) Based on the number of females in the Australian population born in each country/region as at 30 June 2006, except for the 'total' which is based on the number of females in the Australian population at 31 December 2006.

Source: Australian Cancer Database, AIHW.

respective female population, was observed among those born in North-East Asia (0.6%). It is likely that some of these differences relate to the different age structures of these populations, with immigrants from Europe being older, on average, than those from North-East Asia (ABS 2008d).

## Prevalence of breast cancer among males

Of males in Australia alive at the end of 2006, 912 had been diagnosed with breast cancer in the previous 25 years (Table 5.6); this equates to less than 1% of the male population. Five-year prevalence was 414 men and 1-year prevalence was 98 men.

**Table 5.6: Limited-duration prevalence of breast cancer, males, end of 2006**

Time period	Number <sup>(a)</sup>
1-year prevalence	98
5-year prevalence	414
10-year prevalence	648
15-year prevalence	778
20-year prevalence	863
25-year prevalence	912

(a) Refers to the number of *males*, not *cases*, diagnosed with breast cancer.

Source: Australian Cancer Database, AIHW.

Table 5.7 shows differences in the 25-year prevalence of breast cancer in males by age group. At the end of 2006, 233 men aged 80 years and over had been diagnosed with breast cancer in the previous 25 years, compared with 54 men aged less than 50 years.

**Table 5.7: Twenty-five-year prevalence of breast cancer by age group, males, end of 2006**

Age group (years)	Number <sup>(a)</sup>	Per cent of population <sup>(b)</sup>
<50	54	0.0
50–69	344	0.0
70–79	281	0.1
80+	233	0.1
<b>Total</b>	<b>912</b>	<b>0.0</b>

(a) Refers to the number of *males*, not *cases*, diagnosed with breast cancer.

(b) Based on the number of males in the Australian population at 31 December 2006.

Source: Australian Cancer Database, AIHW.