1. Breast cancer screening in Australia 1996–1997

Breast cancer and its management

Breast cancer is the most commonly diagnosed cancer in Australian women and in 1996 accounted for almost 29% (9,846) of new cases of cancer. Breast cancer is also the most common cause of cancer death in women in Australia accounting for 17% (2,623) of all female cancer-related deaths in 1996. Most breast cancers originate in the cells that line the lobules (small lobes of the breast that produce milk) and terminal ducts that carry the milk from the lobules. Breast cancers are classified as invasive when they have spread beyond the basement membrane of the ducts and/or lobules and non-invasive or *in situ* cancers (ductal carcinoma *in situ* or DCIS) when the cancerous cells have not extended beyond the basement membrane.

Breast cancers can often be felt as lumps. The great majority of breast lumps are not cancer. Most breast lumps are benign or fibrocystic lumps (areas of thickening and small fluid-filled cysts). Some of these benign breast diseases have been shown to be risk factors for breast cancer.

Breast cancer and other lumps are most often discovered by:

- a woman noticing or suspecting a lump or something unusual in her breast (breast self-examination)
- a clinical examination of the breasts
- a breast X-ray (mammogram).

Mammography has a distinct advantage over other methods of breast cancer detection because it can detect small tumours before they are detectable by women or the most highly trained clinician. This is an important feature as the survival of women is significantly improved by the early detection of breast cancer.

If a breast abnormality is found at screening, the woman is asked to return for further more detailed X-ray views. If cancer is still suspected, the woman is required to undergo further testing which may include:

- an ultrasound scan of the breast;
- fine needle aspiration—using a local anaesthetic, cells are drawn up through a needle that is inserted through the skin of the breast into the suspicious lump;
- core biopsy—using a local or general anaesthetic a sample of tissue is taken from the suspicious area of the breast;
- diagnostic open biopsy—a diagnostic open biopsy performed with a needle localisation technique.

Where breast cancer is confirmed, treatment involves management of the breast, the axilla and systemic therapy. Management of the breast usually involves either removal of the lump (lumpectomy) which is usually followed by about 7 weeks of radiation therapy to the breast, or removal of the entire breast (mastectomy). The axilla is usually treated by an axillary dissection or axillary radiation in older women. Some women choose to have breast reconstruction either at the time of mastectomy or later. This involves using implants or tissue taken from other parts of the body. Systemic therapy is based on several factors including the probability of relapse, the benefit of adjuvant chemotherapy or Tamoxifen (a drug used to treat breast cancer) or both, the woman's menopausal status, the tumour's oestrogen receptor status and the woman's preferences.

An important factor for prognosis is the size of the tumour at diagnosis. Mammographic screening is important in detecting small breast cancers, particularly those up to 10 mm in diameter which have a lower probability of the cancer having spread to the axillary lymph nodes and a higher probability of cure. Smaller tumours are also more likely to be of lower grade than larger tumours. For women with no lymph node involvement, prognosis is governed by tumour size, histologic grade and histological sub-type. Other prognostic factors include vessel invasion and oestrogen receptor status.

Breast cancer screening

In 1987 the Commonwealth Government commissioned a 3-year evaluation of the feasibility and cost-effectiveness of a national mammography screening program. The evaluation was undertaken by the Screening Evaluation Steering Committee on behalf of the Australian Health Ministers' Advisory Council (AHMAC). Out of this process came the report *Breast Cancer Screening in Australia: Future Directions*, in which a number of recommendations were made to implement a national program for the early detection of breast cancer. In light of this report, breast cancer screening on a national basis began in 1991 with the introduction of the National Program for the Early Detection of Breast Cancer, later known as BreastScreen Australia (DHSH 1994a).

Scientific evidence that early detection could reduce breast cancer mortality, and that mammography was an effective means for carrying out national screening, was first observed in a randomised, controlled trial known as the Health Insurance Plan of Greater New York trial, which began in 1964 (Nyström et al 1993). This resulted in international interest in breast cancer screening and particularly mammography, but there were concerns at the time about the radiation dose associated with mammography. However, these fears were allayed to some extent by improvements in mammographic technique, and the use of intensifying screens that succeeded in reducing the radiation dose by the 1970s.

A large controlled population-based study known as the Swedish Two Counties study was initiated in 1977. By 1985 results from this study showed significant reductions in cancer mortality for women aged 40–74 years of age (Nyström et al 1993). In addition, statistically significant reductions in breast cancer mortality as a result of screening using mammography had also been observed in three case control studies in Nijmegan and Utrecht, the Netherlands, and Florence (AHMAC 1990). A meta-analysis performed on data from the trials above provides an average estimate of reduction in deaths from breast cancer by 22% (AHMAC 1990).

By 1990, as a result of the above studies, national breast cancer screening programs using mammography as the sole screening method were implemented in the United Kingdom, Sweden, Finland and Iceland (AHMAC 1990). In Australia the Screening Evaluation Steering Committee recommended that a national mammography program should incorporate the following features:

- a national mammography screening policy;
- mammographic screening provided as an integrated, systematic and coordinated program;
- national and State/Territory level coordination mechanisms;
- appropriate treatment services;
- provision of adequate resources;
- specialised training for radiographers, radiologists, surgeons and pathologists;
- an appropriate balance of incentives for service providers to maximise quality of service;
- quantitative performance criteria;
- quality assurance and monitoring procedures;
- ongoing monitoring and evaluation of the screening program;
- standardised accreditation procedures; and

- ongoing research and program review (AHMAC 1990).

A national program was established in 1991 called the National Program for the Early Detection of Breast Cancer. Since 1994 it has been called BreastScreen Australia. This program is funded by the Commonwealth and each of the State and Territory Governments, and is administered through State Coordination Units. The funding arrangements require that the assessment and screening services in each State and Territory operate within a nationally integrated system.

The program commenced at a different point in time in each State and Territory, and has now been fully implemented across Australia, with the exception of some of the more remote areas.

State and Territory program and register start dates

	Program	Register
New South Wales	January 1991	July 1991
Victoria	October 1991	January 1993
Queensland	January 1991	January 1991
Western Australia	January 1989	January 1989
South Australia	January 1989	January 1991
Tasmania	February 1993	February 1993
Australian Capital Territory	February 1993	February 1993
Northern Territory	December 1994	December 1994

Generally, screening mammography through BreastScreen Australia requires an X-ray of each breast, with usually two views of each breast recorded. These X-rays are reviewed by two specially trained readers to ensure satisfactory quality, and to identify suspicious characteristics. In some circumstances where additional follow-up is required, mammography that provides additional views of the breast, and/or other tests such as ultrasound, fine needle aspiration or core biopsy may be used.

In addition to screening provided through BreastScreen Australia, Medicare provides benefits for private mammography where a woman presents to her doctor with indications of breast cancer risk (e.g. breast cancer symptoms). These women are not monitored through BreastScreen Australia and therefore the data provided in this report do not cover all breast cancer screening performed in Australia.

BreastScreen Australia

Aims of the program

- To ensure that the program is implemented in such a way that significant reductions can be achieved in morbidity and mortality attributable to breast cancer.
- To maximise the early detection of breast cancer in the target population.
- To ensure that screening for breast cancer in Australia is provided in dedicated, accredited screening and assessment services as part of the National Program for the Early Detection of Breast Cancer (now BreastScreen Australia).
- To ensure equitable access for women aged 50–69 years to the program.
- To ensure that services are acceptable and appropriate to the needs of the eligible population.
- To achieve high standards of program management, service delivery, monitoring and evaluation, and accountability.

(DHSH 1994c)

Major objectives of the program

- To achieve, after five years, a 70% participation rate in the national program by women in the target group (50–69 years) and access on request to the Program for women aged 40–49 years and 70 years or more.
- To rescreen all women in the program at 2-yearly intervals.
- To achieve agreed performance outcomes that minimise recall rates, retake films, invasive procedures, false negatives, and false positives, and maximise the number of cancers detected, particularly the number of small cancers.
- To refer to appropriate treatment services and collect information about the outcome of treatment.
- To collect and analyse data sufficient to monitor the implementation of the program, to evaluate its effectiveness and efficiency, and to provide the basis for future policy and program development decisions.

(DHSH 1994c)

Program delivery

The program delivers its services through specialised BreastScreen Australia mammography units, some of which are in fixed locations while others are mobile and are taken into the more remote areas of Australia. The screening units operate in association with a designated assessment centre/service.

Data related to breast cancer screening are collected centrally by a registry administered by BreastScreen Australia in each State and Territory. These registers are established to send out invitations and reminder notices for women to attend, and monitor the program's performance (Jelfs 1998).

Recruitment and education

BreastScreen Australia offers screening to all women aged 50–69 years. While there is benefit in screening women in their forties, and women aged 70 or more, these women are not actively recruited to the BreastScreen program as the benefits have been shown to be greater for women aged 50–69 years (AHMAC 1990).

Women in the target age group of 50–69 years are actively recruited by direct mailouts based on the electoral roll, advertising campaigns, brochures, and through health care providers. Direct community education campaigns have been implemented to inform women about BreastScreen including working with groups of women who are likely to be under-screened. The campaigns aim to provide balanced information on the benefits and limitations of screening. The program encourages informed participation by women. Letters of invitation and recalls for subsequent screening rounds are sent to eligible women, e.g. in 1996–97 approximately 71,000 invitation letters based on electoral roll listings, and 115,000 routine recall invitation letters were sent out to Victorian women. Of the 176,000 appointments that were allocated, 88% were taken up (BreastScreen Victoria 1997).

BreastScreen does not routinely screen women who have previously had breast cancer. There is variation in State and Territory policies for screening symptomatic women.

When a woman presents at BreastScreen Australia she completes a questionnaire that captures personal, demographic and medical information which is included on the BreastScreen Australia register with her consent. This register also contains screening history, treatment and follow-up information. The information is also used to re-invite women to further screening.

Follow-up

Once the results of screening are known, women are either recommended for routine two-yearly rescreening (if no cancer is detected), or for further assessment if the results are inconclusive, or if a mammographic abnormality is suspected.

Although BreastScreen Australia does not provide treatment for women who have a breast cancer or other conditions detected, it does refer women back to their GP or on to treatment services, as the woman desires. It is policy that the women are actively involved in decisions about their management and that written information is provided to the women. The women are also given the choice of being referred on to a clinic specialising in the treatment of breast cancer, or if they prefer, seeking a referral from their own GP to a surgeon (DHSH 1994c). BreastScreen Australia also collects data on the outcomes of treatment (DHSH 1994c).

Mammography outside the program

The focus of this report is on women who have had a mammogram in the BreastScreen Australia program. However other mammography for screening and diagnosis (i.e. investigating breast symptoms) is conducted outside the program. Therefore, to some extent, the results described in this report are an underestimation of screening on a national basis. An analysis of the 1996 National Breast Health Survey shows that of the women surveyed, 8.1% had been screened outside of BreastScreen Australia in the 2 years prior to being surveyed (Barratt et al. 1997).

Medicare benefits are not usually payable for health screening services and this includes screening mammography. Medicare benefits are available for diagnostic mammography where there is reason to suspect the presence of breast cancer. This includes instances where

there are symptoms or indications of breast cancer found on examination of the patient. Unpublished Medicare data show that since 1991 the age-standardised rate for all women of diagnostic mammograms per 1,000 women has fallen from 53.2 to 38.3 in 1997. This fall corresponds to the introduction of BreastScreen Australia. There was a fall in the rate of Medicare mammograms in the corresponding target population for BreastScreen Australia (50–69 years) from 140.9 per 1,000 women in 1991 to 104.0 per 1,000 women in 1997.

Table 1.1: Number of diagnostic mammograms, by State and Territory, 1991–1997

State/Territory	1991	1992	1993	1994	1995	1996	1997
NSW	169,206	158,951	163,489	147,361	146,525	123,970	128,486
Vic	90,950	93,697	101,950	96,012	89,140	78,069	79,479
Qld	72,595	63,584	64,354	61,917	68,561	61,022	61,394
WA	31,661	36,371	36,641	43,263	39,475	33,461	35,008
SA	24,942	22,556	21,140	22,033	21,878	20,005	20,226
Tas	9,036	8,401	7,788	6,381	6,706	5,840	6,204
ACT	7,894	6,987	5,516	4,614	4,561	4,054	4,330
NT	2,336	2,221	2,277	2,512	1,927	1,429	1,371
Australia							
All ages	**408,620**	**392,768**	**403,155**	**384,093**	**378,773**	**327,850**	**336,498**
Ages 50–69	**158,211**	**155,416**	**165,106**	**151,217**	**147,584**	**129,812**	**136,033**

Source: Health Benefits Division, Commonwealth Department of Health and Family Services (DHFS)—unpublished data.

Table 1.2: Age-standardised rate per 1,000 women of diagnostic mammograms, by State and Territory, 1991–1997

State/Territory	1991	1992	1993	1994	1995	1996	1997
NSW	63.8	59.0	56.7	52.5	51.1	42.2	42.9
Vic	45.9	46.6	50.0	46.1	41.7	35.8	35.8
Qld	56.3	47.8	46.9	43.5	46.7	40.2	39.2
WA	45.1	50.4	49.9	57.1	50.7	41.8	42.5
SA	37.5	33.1	30.6	31.4	30.6	27.5	27.5
Tas	43.9	40.0	36.6	29.3	30.4	26.0	27.3
ACT	83.3	56.2	43.7	34.9	33.5	29.1	30.4
NT	40.8	37.9	38.5	42.2	29.7	20.9	19.4
Australia							
All ages	**53.2**	**50.2**	**50.6**	**46.9**	**45.1**	**38.1**	**38.3**
Ages 50–69	**140.9**	**135.9**	**141.7**	**126.7**	**120.4**	**103.1**	**104.0**

Source: Health Benefits Division, Commonwealth Department of Health and Family Services (DHFS)—Unpublished data.

National breast cancer screening monitoring indicators

Screening indicators to monitor BreastScreen Australia cover the areas of participation, detection, sensitivity, incidence and mortality. These indicators have been endorsed by the National Screening Information Advisory Group and the BreastScreen Australia Program in each of the States and Territories. The indicators and their definitions are provided below. On the following pages is an overview of each indicator's intention, application and definition. This is supported where possible with data indicating the current status and trend in the indicator. In some circumstances in this report, additional information has been provided beyond these indicators.

Indicator 1: Participation rate for breast cancer screening

Per cent of women screened in a 24-month period by 5-year age groups (40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84, 85+) and for the target age group (50–69 years).

Indicator 2: Detection rate for small cancers

Rate of women with small diameter (= 10 mm) invasive breast cancers per 10,000 women screened in a 12-month period by 5-year age groups (40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84, 85+) and for the target age group (50–69 years).

Indicator 3: Sensitivity

This indicator is yet to be finalised. It is pending completion of the National Breast Cancer Centre research project into an interval cancer definition.

Indicator 4: Incidence of breast cancer

Incidence rate of breast cancer per 100,000 estimated resident female population in a 12-month period by 5-year age groups (40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84, 85+) and for the target age group (50–69 years—age-standardised).

Indicator 5: Mortality from breast cancer

Death rate of breast cancer per 100,000 estimated resident female population in a 12-month period by 5-year age groups (40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84, 85+) and for the target age group (50–69 years—age-standardised).

Participation

One of the main objectives of the program is to develop and maintain high population coverage with a 2-yearly screening interval. BreastScreen Australia aims to have a participation rate of 70% of women in the target age group (50–69 years), and access on request for women aged 40–49 years and 70–79 years in order to achieve the mortality reductions experienced in the screening trials (DHSH 1994c). The participation rate of all eligible Australian women screened by BreastScreen Australia is therefore important in monitoring the program's impact.

To date, reported participation rates have been measured using different periods ranging from 24 to 36 months. This variation evolved because in practice a number of women attend their rescreen in the short period after the recommended 24-month screening period. This anomaly needs to be taken into account when comparing participation rates with previously published estimates. This report measures participation rates based on the recommended 24-month period.

The participation indicator:

- measures the proportion of the eligible population attending the screening programs within the recommended screening interval;
- is important in assessing the contribution of the screening program to changes in incidence and mortality. The indicator can also be used as a means of evaluating recruitment practices particularly if participation rates are analysed by demographic characteristics;
- when used in conjunction with other indicators, can be used to support debate relating to target groups and screening intervals.

Education of health practitioners and the general public through awareness campaigns and seminars is aimed at improving participation rates. Analysis of the 1996 National Breast Health Survey shows that awareness of the national screening program is high (90% of women surveyed). It also showed that compliance by women in the target group (50–69 years) is good (70% of women surveyed who fell into the target age group reported having had a screening mammogram). In contrast, knowledge of the purpose of screening and who the target age group is, is not as widespread (1% of women surveyed were able to correctly state that screening was for asymptomatic women, and 60% of women surveyed could state that the target age group began at 50 years of age) (Barratt et al. 1997).

Indicator 1: Participation

Per cent of women screened in a 24-month period by 5-year age groups (40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84, 85+) and for the target age group (50–69 years).

- The participation rate for BreastScreen Australia for the 24-month period 1996–1997 was 52.2% of the target population (women aged 50–69 years). The participation rate for the target population peaked for women aged 55–59 years, and was slightly lower for women aged 65–69 years (Figure 1.1, Table 1.3).
- In the 24-month period 1996–1997 there were 1,262,584 women screened. The target age group (women aged 50–69 years) made up 68% (858,303) of all women screened by BreastScreen Australia.

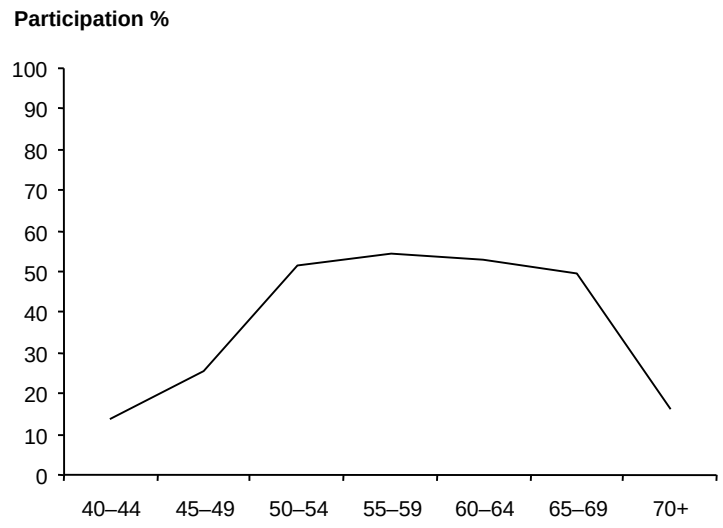


Figure 1.1: Participation of women in BreastScreen Australia by age group, Australia, 1996–1997

- Participation rates peaked for women in the target age group (50–69 years). Overall, participation rates increased with increasing age, reaching its peak at age 55–59 years. The rate was relatively stable in the target age group (50–69 years) but decreased rapidly in women in the older age groups (Figure 1.1, Table 1.4).
- This distribution illustrates that BreastScreen Australia has succeeded in achieving its highest participation rates in women who are 50–69 years of age. However, the program has not as yet reached its target of 70% participation to achieve the anticipated mortality reductions.

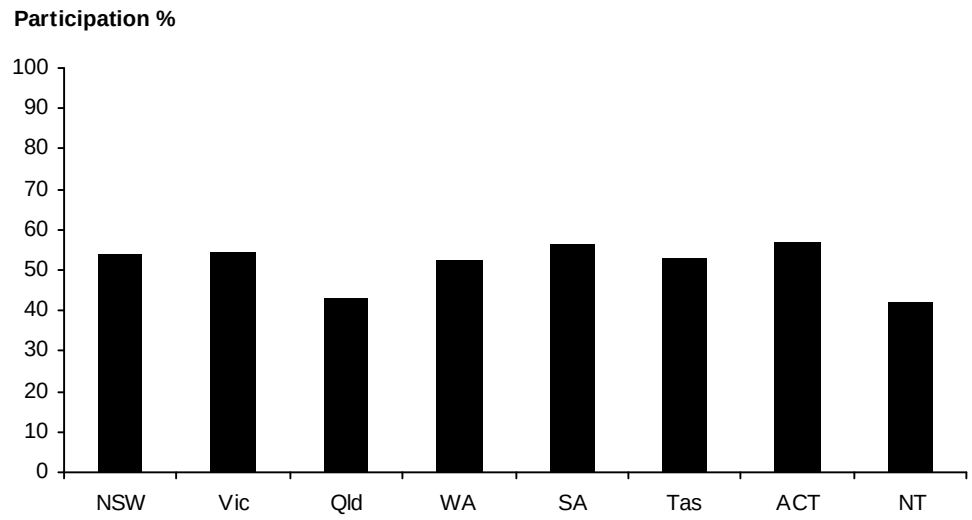


Figure 1.2: Participation of women in BreastScreen Australia by women aged 50–69 years, by State and Territory, 1996–1997

- There was some interstate variation in participation rates, with higher rates in the Australian Capital Territory (57.1%) and South Australia (56.4%), and lower participation rates in Queensland (42.9%) and the Northern Territory (42.0%) (Figure 1.2, Table 1.4).
- The participation rate for Queensland reflects, to some extent, that at the end of 1997 only 5 out of the 11 fixed BreastScreen Queensland services had been operating for 5 years or more.
- It should be noted that the ability to make screening available to all women is not equal across the country. This is due in part to specific problems such as the vast distances women or screening units need to travel, access to rural and remote locations, availability of mobile screening units and support staff, and the acceptance of the program among women of various cultural and socioeconomic backgrounds. In addition, participation rates are influenced by the length of time a program has been operating. These implementation conditions described above affect the participation rates of Queensland and the Northern Territory compared with, say, the Australian Capital Territory which is predominantly an urban environment.

Detection of small cancers

The principal aim of the breast cancer screening program is to maximise the early detection of incident breast cancers. The early detection of breast cancer results, in most cases, in increased survival time, reductions in mortality and morbidity. Early-stage breast cancers are less expensive to manage.

BreastScreen Australia aims to have a small cancer (= 10 mm in diameter) detection rate of greater than 8 per 10,000 screened women (DHSH 1994c).

The detection rate indicator:

- measures the rate of small invasive breast cancers (= 10mm) found by the screening programs and the effectiveness of screening techniques at each age;
- is important in evaluating the quality and standards of service delivered by the screening programs;
- may also be used to compare the size distribution of cancers diagnosed inside and outside BreastScreen Australia when matched with cancer registry data.

One of the factors influencing the detection rate of a screening program is the interval between each screen. If the interval is too long, and there is sufficient time for a cancer to grow to the size where it can be detected without the aid of mammography, then the advantage that mammography provides in the early detection of small cancers is lost. That is, there will be more cancers found at an advanced stage either at screening, or between screening visits (Kopans 1993).

The benefits of breast cancer screening are highlighted in studies that compare women who are screened with women who are not. They show that the incidence rate of breast cancer in women who are screened is reduced in the first year after screening, and that the incidence rate then rises in the second year. By the third year the incidence rate rises towards that for women not participating in a screening program. In other words, as the interval between screenings becomes longer than 12 months, the number of cancers found in women who are screened becomes greater. It has been argued that the benefits of screening may disappear after an interval of three years (Colditz et al. 1997).

Women who are found to have small invasive cancers are less likely to undergo a mastectomy than those with larger tumours. For example, 72% of women with small breast cancers (= 10 mm in diameter) underwent a local excision compared with about 48% for women with tumours over 15 mm. Women with smaller cancers are able to have more choice in terms of breast conservation versus mastectomy with similar survival rates. Women diagnosed with these small cancers are less likely to have positive axillary nodes and less likely to have adjuvant chemotherapy compared with women who present with symptomatic disease (BreastScreen Australia 1996).

Indicator 2: Detection rate for small cancers

Rate of women with small diameter (= 10mm) invasive breast cancers per 10,000 women screened in a 12-month period by 5-year age groups (40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84, 85+) and for the target age group (50–69 years).

- The small cancer detection rate for 1997 was 14.4 cancers per 10,000 women screened for the target population, and 14.2 for all women screened (Table 1.6). This result is far in excess of the target set for the program (greater than 8 per 10,000 women screened).
- BreastScreen Australia detected small invasive cancer in 952 women. The target age group (women aged 50–69 years) made up 69% (639) of all women screened for whom small invasive cancer was detected (Tables 1.5).
- Thirty-six per cent of all invasive breast cancers detected by BreastScreen were small diameter cancers (= 10mm). In the target age group small diameter cancers comprised 37% of all invasive cancers detected.

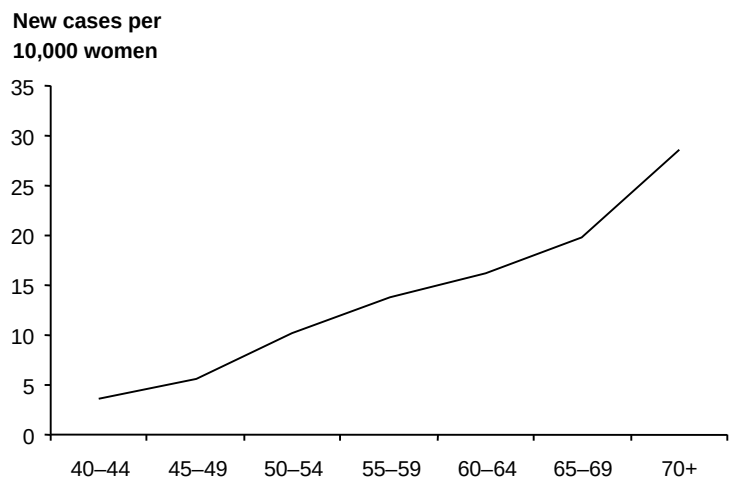


Figure 1.3: Rate of small invasive breast cancers detected by women aged 40–70+ years, Australia, 1997

- The detection rate for small cancers increased with age. The detection rate was 3.6 per 10,000 for women aged 40–44 years, 10.2 for those aged 50–54 years, and 19.9 for those aged 65–69 years (Figure 1.3; Table 1.6).

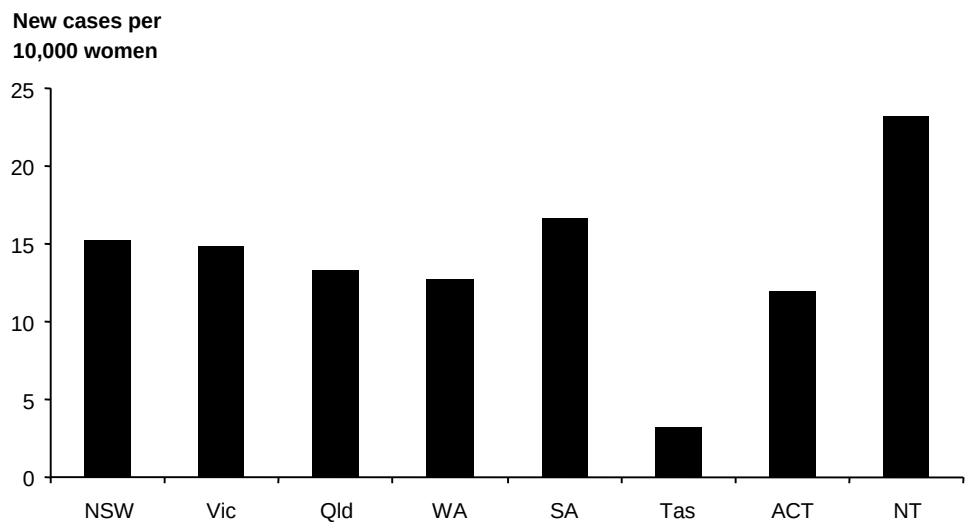


Figure 1.4: Rate of small invasive breast cancers detected by women aged 50–69 years, by State and Territory, 1997

- The detection rate varied across the State and Territory programs, ranging from 23.2 small cancers detected per 10,000 women screened in the Northern Territory, to 3.2 in Tasmania. This substantially lower rate for Tasmania is probably a statistical anomaly due to comparatively small numbers in a single year, and in more recent data (1997–1998) Tasmania has reported a small cancer detection rate of 9.4 per 10,000 women screened (Figure 1.4, Table 1.6). This indicator will be stabilised for the smaller States and Territories by the accumulation of several years of data and presented in future reports.

Sensitivity

The major objective of the screening program is to reduce the level of mortality. However, as a consequence of screening women, some morbidity associated with the screening and subsequent diagnostic processes is incurred.

The sensitivity indicator is still being developed. It is expected that data will be available for this indicator for the 1997–1998 report. The sensitivity indicator will:

- measure the relationship between the screening test results and what the screen is supposed to measure, that is the presence or absence of disease;
- evaluate the validity of the screening test, or whether the test does what it is supposed to do. A high sensitivity suggests that fewer women are incorrectly classified as false negatives (a false negative is when the test is negative but the disease is really present).

Incidence

It is important to know the burden of disease for breast cancer in the community in order to formulate policy and allocate resources to deal with the disease.

The incidence of breast cancer indicator:

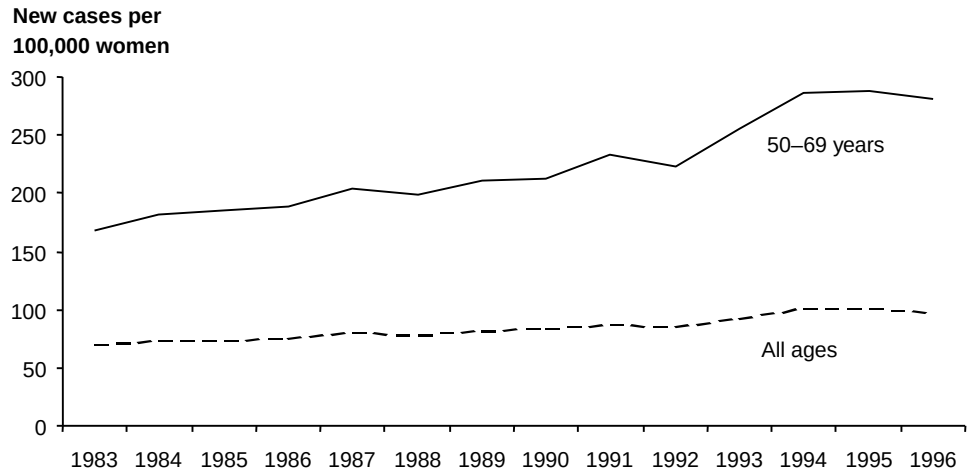
- measures the number of new cases of breast cancer in the community. This indicator does not discriminate whether these cancers were screen detected or not.
- can be used to examine trends over time, and the distribution of disease by age, State and Territory, and other demographic characteristics allowing for national and international comparisons.

Incidence rates are important in determining which groups of women should be included in the target population for BreastScreen Australia. The introduction of a breast screening program may result in the paradox whereby, in the short term, the number of new cases of cancer increases because cancers are found earlier, while at the same time the number of deaths decreases. However, in the long term the incidence rate will return to its underlying rate.

Indicator 4: Incidence of breast cancer

Incidence rate of breast cancer per 100,000 estimated resident female population in a 12-month period by 5-year age groups (40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84, 85+) and for the target age group (50–69 years—age-standardised).

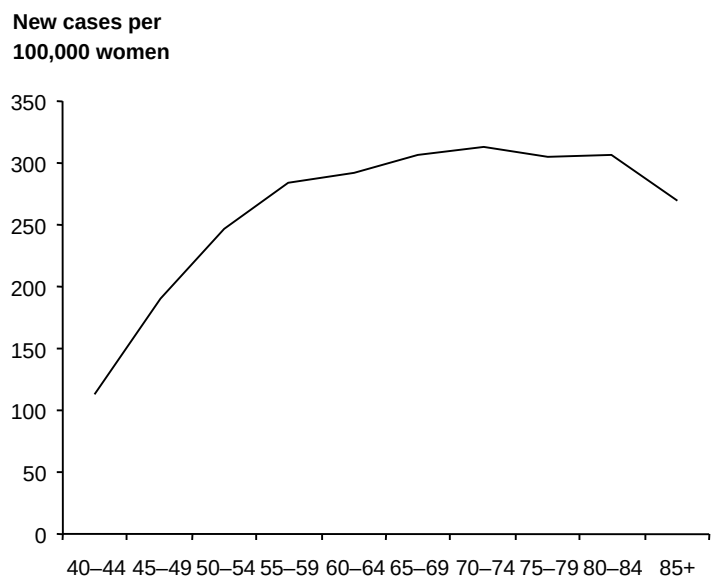
- Breast cancer is the most frequently diagnosed cancer in females (excluding non-melanocytic skin cancer). The incidence of breast cancer in females (all ages) rose from 70 cases per 100,000 in 1983 to 98 cases per 100,000 in 1996, an average annual rise of 3.4% (Table 1.9).



Source: National Cancer Statistics Clearing House.

Figure 1.5: Age-standardised incidence rates of breast cancer, Australia, 1983–1996

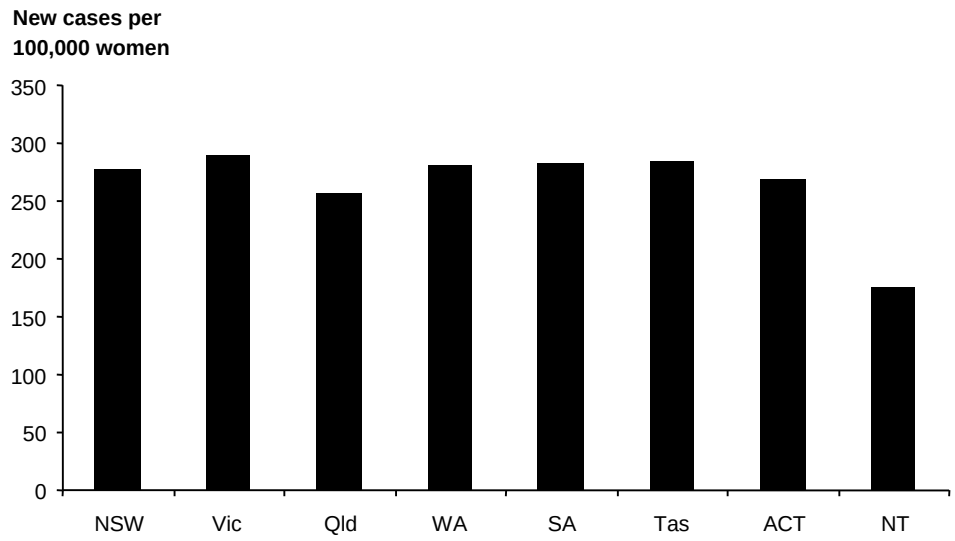
- In the screening target age group (50–69 years) the incidence rates rose more rapidly between 1983 and 1996 than in other age groups (Figure 1.5, Table 1.9). This increase was marked in the period 1992–1995 where the incidence rate jumped by 29% to its peak of 287 new cases per 100,000. Some of this increase may be attributed to the early detection of breast cancers that may not otherwise have been detected until a later stage. This rate subsequently fell to 281 new cases per 100,000 in 1996. It is possible that the rate may have fallen due to the reduced number of prevalent cancers now being detected by BreastScreen Australia. Despite this national trend there may be some regions where this did not occur due to the staged introduction of screening across Australia.
- Breast cancer incidence is predicted to decrease slightly by 1999. However it should be noted that this projected fall has contrasting patterns for women aged 30–59 (increase) and women aged 60 years and over (decrease) (Kricker & Jelfs 1996).



Source: National Cancer Statistics Clearing House.

Figure 1.6: Age-specific incidence rates of breast cancer, Australia, 1996

- Breast cancer incidence increased with age in 1996, peaking at 70–74 years (312.8 new cases per 100,000 women) (Figure 1.6, Table 1.9).



Source: National Cancer Statistics Clearing House.

Figure 1.7: Age-standardised incidence rates for breast cancer by women aged 50–69 years, by State and Territory, 1993–1996

- The incidence rate for breast cancer for women aged 50–69 years was lower in the Northern Territory (176 new cases of breast cancer per 100,000 women) than in the other States and the Australian Capital Territory (1993–1996). Most other States and the Australian Capital Territory had similar incidence rates (Figure 1.7, Table 1.11).

Mortality

The main objective of the breast cancer screening program is to reduce mortality due to breast cancer.

The mortality indicator:

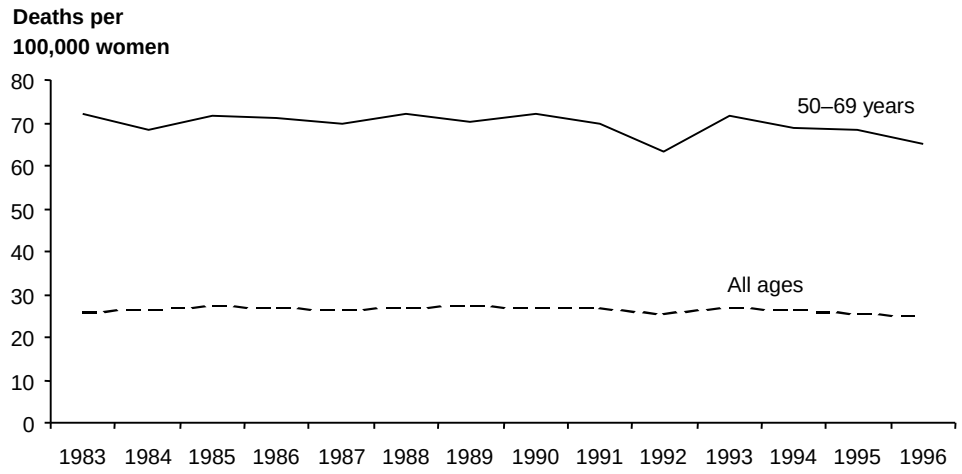
- measures the level of mortality from breast cancer in the total female population by age, and other demographic characteristics;
- can be measured for the total population or the screened population only. The former can be achieved through the national mortality database. The latter is theoretically possible and would require the combination of the National Death Index and the screened population via record linkage and appropriate data access protocols;
- is important because from it, an assessment can be made of changes in mortality in each of the age groups, and in particular the target age groups for each screening program over time. However, it should be noted that changes in the mortality rates might not be evident for a number of years following the commencement of screening. Therefore the effectiveness of this measure needs to be viewed in the longer rather than short term;
- disaggregated by age and other demographic variables, can assist policy makers in assessing programs and changing current policies.

In order for a breast cancer screening program to have an effect on mortality, the number of women being screened must be substantial. Data from the Swedish trial of mammography show that for every 4,000 woman years, every 1,460 mammographic examinations, every 13.5 biopsies and every 7.4 breast cancers detected, there is one death prevented from breast cancer (for women aged 50–69 years at entry to the trial) (Colditz et al. 1997). BreastScreen Australia aims for 70% of women aged 50–69 years to participate in the screening program. If this participation rate is achieved it is expected that there would be a reduction of approximately 25–30% in death rates from breast cancer for women aged 50 years or more undergoing screening. This mortality reduction should follow a delay of about 5 to 10 years from the start of screening (DHSH 1994c).

Indicator 5: Mortality from breast cancer

Death rate of breast cancer per 100,000 estimated resident female population in a 12-month period by 5-year age groups (40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84, 85+) and for the target age group (50–69 years—age-standardised).

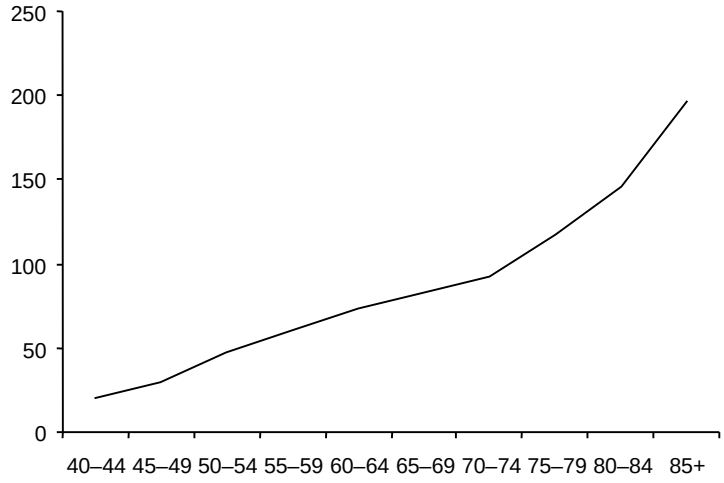
- Breast cancer is the most common cause of cancer-related death in women with approximately 2,600 deaths each year in Australia (Table 1.12). The breast cancer mortality rate for all ages (approximately 25 deaths per 100,000) has been relatively stable since 1983, with a small decline since 1993 (Table 1.13).



Source: AIHW Mortality Database.

Figure 1.8: Age-standardised mortality rates for breast cancer, Australia, 1983–1996

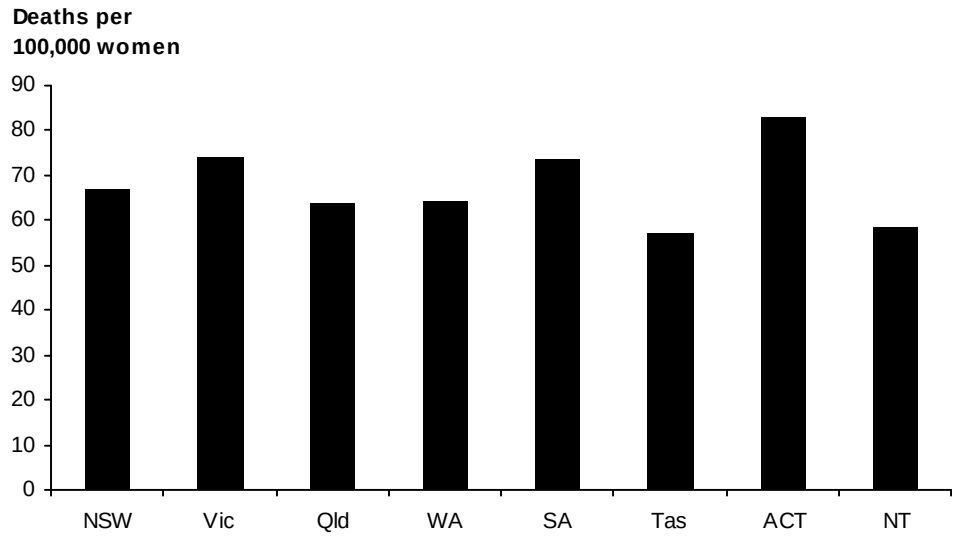
- The breast cancer screening target group (women aged 50–69) comprises 40% of all breast cancer deaths. The mortality rate for these women has declined by 9.1% between 1993 and 1996 to 65 deaths per 100,000 (Figure 1.8). Mortality rates for all women declined by 7.3% to 25 deaths per 100,000 women over the same period (Figure 1.8, Table 1.13).
- The median age of death from breast cancer was 66 years in 1996, and has remained at between 65 and 67 years since 1988.
- It is expected that if benefits from the BreastScreen Australia program are to occur they will become apparent in this indicator 5 to 10 years from commencement of the screening program. This period should see the benefits of early detection and management reducing the mortality rate, not only in those aged 50–69, but in older age groups as well.



Source: AIHW Mortality Database.

Figure 1.9: Age-specific mortality rates for breast cancer, Australia, 1996

- Age-specific death rates from breast cancer increased rapidly with age in 1996. The rate increased from 21 deaths per 100,000 for women aged 40–44 years to 83 for women aged 65–69 years (Figure 1.9, Table 1.13). Overall, the age-specific mortality rates have changed little since 1982 (Kricker & Jelfs 1996).



Source: AIHW Mortality Database.

Figure 1.10: Age-standardised mortality rates for breast cancer by women aged 50–69 years, by State and Territory, 1993–1996

- Across the States and Territories, mortality rates for breast cancer for women aged 50–69 years ranged from 83 per 100,000 women in the Australian Capital Territory to 57 in Tasmania for the period 1993–1996 (Figure 1.10, Table 1.15).

Tables

Indicator 1: Participation

Table 1.3: Number of women participating in breast screening under BreastScreen Australia by age, by State and Territory, 1996–1997

Age group	NSW[(a)]	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
40–44	40,864	11,335	24,632	6,535	5,130	3,482	1,944	768	94,690
45–49	64,790	21,248	34,593	18,737	11,382	5,934	3,949	1,111	161,744
50–54	93,181	71,547	40,269	25,040	23,285	7,062	4,975	1,729	267,088
55–59	80,782	58,920	32,697	21,129	21,197	6,330	3,648	1,121	225,824
60–64	69,153	50,587	27,053	17,548	18,075	5,315	2,646	582	190,959
65–69	65,161	47,049	24,085	14,401	16,693	4,586	2,089	368	174,432
70–74	43,022	30,011	16,070	3,996	4,147	1,186	665	126	99,223
75–79	16,703	7,506	8,333	1,434	1,395	438	298	59	36,166
80–84	6,264	1,661	2,476	369	309	108	63	12	11,262
85 +	0	333	531	87	46	14	16	3	1,030
Not stated	0	0	0	1	0	0	0	0	1
All ages	**480,085**	**300,197**	**210,739**	**109,277**	**101,659**	**34,455**	**20,293**	**5,879**	**1,262,584**
Ages 50–69	**308,277**	**228,103**	**124,104**	**78,118**	**79,250**	**23,293**	**13,358**	**3,800**	**858,303**

(a) New South Wales has grouped all women aged 80 years or more, and for the purposes of this table they appear in the 80–84 age group.

Table 1.4: Age-specific rates for women participating in breast screening under BreastScreen Australia, by State and Territory, 1996–1997

Age group	NSW[(a)]	Vic	Qld	WA	SA	Tas	ACT	NT[(b)]	Australia
40–44	17.8	6.6	19.9	9.47	9.3	19.7	15.5	11.5	13.8
45–49	30.3	13.3	29.6	29.99	21.6	36.1	32.1	19.8	25.3
50–54	53.0	55.4	42.4	52.28	54.2	52.7	55.8	43.6	51.7
55–59	56.6	56.1	44.5	55.19	61.1	56.7	60.2	46.7	54.6
60–64	54.8	54.3	44.2	54.70	58.0	54.4	58.9	36.9	53.1
65–69	51.8	51.6	40.4	47.94	52.5	48.4	53.4	33.3	49.4
70–74	36.7	35.1	29.7	15.19	13.4	13.3	18.6	16.5	30.3
75–79	18.7	11.7	19.8	7.24	5.8	6.2	11.9	12.1	14.5
80–84	5.5	3.6	8.5	2.49	1.8	2.1	3.8	4.2	6.3
85 +	0.0	0.9	2.3	0.70	0.3	0.4	1.3	1.3	0.7
All ages	**36.0**	**30.5**	**31.0**	**30.94**	**30.4**	**33.5**	**35.5**	**25.4**	**32.6**
Ages 50–69	**54.0**	**54.5**	**42.9**	**52.68**	**56.4**	**53.2**	**57.1**	**42.0**	**52.2**

(a) New South Wales has grouped all women aged 80 years or more, and for the purposes of this report they appear in the 80–84 age group.

(b) It has been agreed that due to the difficulties faced by NT BreastScreen in reaching Indigenous women living remotely, the agreed population to be targeted is actually 10.8% lower. Using this population estimate, the participation rate for the Northern Territory rises to 48.7%.

Note: Rates are calculated using the average of the 1996 and the 1997 estimated residential populations (see Appendices, Population Data).

Indicator 2: Detection rate for small cancers

Table 1.5: Number of cases of small diameter (= 10 mm) invasive breast cancers and all invasive cancers detected in women screened by age, by State and Territory, 1997

Age group	NSW[(a)]	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Small invasive cancers									
40–44	7	4	3	4	0	0	0	0	18
45–49	20	6	7	8	3	1	1	1	47
50–54	44	44	27	9	22	1	1	2	150
55–59	64	39	23	12	18	0	5	3	164
60–64	70	35	26	16	11	2	0	1	161
65–69	64	51	23	17	20	1	3	0	179
70–74	52	47	29	7	7	0	0	1	143
75–79	21	15	18	2	4	1	0	0	61
80–84	12	5	3	1	2	0	1	0	24
85 +	[(a)]	1	1	2	1	0	0	0	5
All ages	**354**	**247**	**160**	**78**	**88**	**6**	**11**	**8**	**952**
Ages 50–69	**242**	**169**	**99**	**54**	**71**	**4**	**9**	**6**	**654**
All invasive cancers									
All ages	**877**	**681**	**499**	**222**	**252**	**41**	**47**	**12**	**2,631**
Ages 50–69	**575**	**492**	**304**	**160**	**191**	**24**	**34**	**9**	**1,789**

(a) New South Wales has grouped all women aged 80 years or more, and for the purposes of this table they appear in the 80–84 age group.

Table 1.6: Rate of small diameter (= 10 mm) invasive breast cancers per 10,000 screened women, by age, by State and Territory, 1997

Age group	NSW[(a)]	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
40–44	3.2	6.8	2.2	10.6	0.0	0.0	0.0	0.0	3.6
45–49	6.0	5.5	3.7	9.1	5.5	3.4	4.7	14.1	5.6
50–54	8.9	11.2	11.2	6.5	17.2	2.7	3.6	17.2	10.2
55–59	15.5	13.7	11.8	10.5	15.9	0.0	24.3	38.0	13.9
60–64	19.6	14.5	16.1	17.0	11.3	7.2	0.0	25.3	16.2
65–69	19.4	23.3	16.0	21.1	22.6	4.0	24.8	0.0	19.9
70–74	22.6	30.7	30.6	30.1	30.9	0.0	0.0	133.3	26.8
75–79	21.9	38.5	35.0	21.9	49.6	39.5	0.0	0.0	29.3
80–84	33.3	58.4	20.2	44.6	117.6	0.0	333.3	0.0	37.4
85 +	[(a)]	57.8	32.2	370.4	400.0	0.0	0.0	0.0	86.5
All ages	**14.1**	**16.4**	**13.0**	**13.3**	**16.3**	**3.4**	**9.8**	**20.7**	**14.2**
Ages 50–69	**15.2**	**14.9**	**13.4**	**12.6**	**16.6**	**3.2**	**12.0**	**23.2**	**14.4**

(a) New South Wales has grouped all women aged 80 years or more, and for the purposes of this table they appear in the 80–84 age group.

Table 1.7: Number of women screened by BreastScreen Australia by age, by State and Territory, 1997

Age group	NSW[(a)]	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
40–44	21,896	5,912	13,431	3,787	2,602	1,526	960	462	50,576
45–49	33,357	10,924	19,091	8,760	5,501	2,916	2,123	707	83,379
50–54	49,312	39,263	24,144	13,759	12,793	3,751	2,751	1,166	146,939
55–59	41,310	28,439	19,422	11,468	11,340	3,298	2,058	789	118,124
60–64	35,654	24,066	16,114	9,426	9,708	2,766	1,509	395	99,638
65–69	32,941	21,852	14,348	8,045	8,867	2,494	1,208	233	89,988
70–74	22,966	15,302	9,465	2,329	2,267	633	387	75	53,424
75–79	9,598	3,894	5,137	912	807	253	158	31	20,790
80–84	3,599	856	1,484	224	170	53	30	8	6,424
85 +	[(a)]	173	311	54	25	6	9	0	578
Not stated	0	0	0	1	0	0	0	0	1
All ages	**250,633**	**150,681**	**122,947**	**58,765**	**54,080**	**17,696**	**11,193**	**3,866**	**669,861**
Ages 50–69	**159,217**	**113,620**	**74,028**	**42,698**	**42,708**	**12,309**	**7,526**	**2,583**	**454,689**

(a) New South Wales has grouped all women aged 80 years or more, and for the purposes of this figure they appear in the 80–84 age group.

Indicator 4: Incidence of breast cancer

Table 1.8: Number of new cases of breast cancer in women by age, Australia, 1983–1996

Age group	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
0–4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5–9	0	0	0	0	0	0	0	0	0	0	0	0	1	0
10–14	0	0	1	0	0	0	0	0	0	0	1	0	1	0
15–19	0	2	0	0	0	0	0	0	0	0	1	0	1	1
20–24	6	4	4	5	4	7	7	4	11	6	13	6	7	6
25–29	37	41	35	48	58	48	45	49	46	44	59	56	55	43
30–34	142	143	145	147	189	162	157	204	181	180	164	196	202	198
35–39	305	291	343	329	363	351	364	341	395	380	402	394	392	413
40–44	418	496	482	481	585	657	647	668	722	700	776	765	750	763
45–49	563	533	592	568	692	666	750	819	857	1,011	1,021	1,132	1,221	1,215
50–54	537	540	507	593	598	636	714	783	853	841	975	1,102	1,238	1,230
55–59	607	676	669	664	704	631	669	691	810	816	930	1,027	1,135	1,156
60–64	617	693	720	711	820	836	888	832	887	787	965	1,094	1,067	1,044
65–69	551	607	685	671	783	766	824	855	932	925	1,014	1,207	1,097	1,085
70–74	584	642	627	691	635	696	714	751	800	757	907	1,024	991	1,023
75–79	379	437	498	529	576	562	620	625	664	651	679	763	842	745
80–84	297	294	320	333	382	381	385	416	474	490	457	510	571	542
85+	225	233	242	280	288	280	299	323	360	355	374	366	380	382
Total	**5,268**	**5,632**	**5,870**	**6,050**	**6,677**	**6,679**	**7,083**	**7,361**	**7,992**	**7,943**	**8,738**	**9,642**	**9,951**	**9,846**

Source: National Cancer Statistics Clearing House.

Table 1.9: Age-specific and age-standardised incidence rates for breast cancer in women, Australia, 1983–1996

Age group	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
0–4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5–9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
10–14	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.0
15–19	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.2
20–24	0.9	0.6	0.6	0.8	0.6	1.1	1.1	0.6	1.6	0.9	1.8	0.8	1.0	0.9
25–29	5.9	6.4	5.4	7.2	8.5	6.9	6.4	6.9	6.6	6.4	8.7	8.2	8.0	6.1
30–34	23.1	23.1	23.2	23.3	29.2	24.5	23.2	29.4	25.4	24.8	22.4	26.7	27.6	27.4
35–39	54.6	50.2	56.9	52.7	58.1	55.3	56.4	51.9	59.5	56.1	58.4	56.5	55.0	56.6
40–44	96.4	109.7	102.0	97.1	109.2	115.3	108.6	108.0	113.0	109.1	119.9	116.4	112.3	112.4
45–49	150.5	138.1	148.6	138.5	164.1	153.0	164.5	171.1	170.5	187.7	178.2	190.0	198.0	189.9
50–54	146.2	149.2	141.6	166.0	162.5	168.5	183.5	195.3	206.5	198.2	224.7	243.2	260.1	247.3
55–59	162.2	180.5	178.9	177.5	191.7	173.6	185.3	192.4	225.8	222.7	247.5	266.3	287.0	283.7
60–64	179.6	194.4	197.9	196.7	222.6	225.9	239.6	224.5	239.7	215.5	268.4	306.5	299.1	292.7
65–69	189.2	210.2	234.2	218.5	247.7	232.6	240.3	245.3	265.3	262.1	285.3	340.5	309.7	305.9
70–74	240.9	254.4	241.9	263.8	237.6	260.2	268.6	277.5	283.4	258.8	298.8	322.7	306.8	312.8
75–79	224.3	248.0	270.7	273.5	289.6	273.0	288.7	283.2	294.5	284.2	295.2	334.9	360.8	305.6
80–84	274.2	260.4	277.3	286.2	308.6	295.2	287.7	298.6	326.0	323.5	288.7	305.1	331.1	306.9
85+	280.3	280.0	272.5	309.3	296.3	280.5	289.7	305.8	327.2	307.0	306.9	287.0	282.9	269.8
All ages														
AS Rate (A)	70.1	73.1	74.5	75.0	80.9	79.1	81.9	83.2	88.2	85.7	92.7	100.3	101.1	97.8
AS Rate (W)	56.5	58.9	59.8	60.1	65.2	63.7	66.3	67.4	71.5	69.7	75.9	82.2	82.9	80.5
Ages 50–69														
AS Rate (A)	168.0	181.7	185.5	188.2	203.7	198.4	210.6	213.1	232.6	222.8	254.7	286.4	287.4	280.6
AS Rate (W)	166.6	179.7	182.4	186.4	200.8	196.1	208.6	211.2	230.6	220.6	252.7	283.1	285.9	278.7

Note: Rates are expressed per 100,000 women and age standardised to both the Australian 1991 population (A) and the World StandardPopulation (W).

Source: National Cancer Statistics Clearing House.

Table 1.10: Number of new cases of breast cancer in women by age, by State and Territory, 1993–1996

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
0–4	0	0	0	0	0	0	0	0	0
5–9	0	1	0	0	0	0	0	0	1
10–14	0	0	2	0	0	0	0	0	2
15–19	0	0	2	0	1	0	0	0	3
20–24	12	6	9	4	1	0	0	0	32
25–29	73	62	37	14	16	6	4	1	213
30–34	255	191	133	70	65	26	14	6	760
35–39	523	421	302	144	115	49	30	17	1,601
40–44	1,076	775	481	305	254	76	61	26	3,054
45–49	1,559	1,172	861	394	362	115	90	36	4,589
50–54	1,567	1,160	796	389	400	128	83	22	4,545
55–59	1,449	1,147	667	409	375	127	57	17	4,248
60–64	1,481	1,146	642	377	352	107	56	10	4,171
65–69	1,598	1,206	642	378	418	120	34	7	4,403
70–74	1,378	1,089	653	339	341	93	48	4	3,945
75–79	1,035	795	522	263	295	84	32	3	3,029
80–84	711	571	343	191	200	47	16	1	2,080
85+	480	374	294	157	152	33	11	1	1,502
Total	**13,197**	**10,116**	**6,386**	**3,434**	**3,347**	**1,011**	**536**	**151**	**38,178**

Source: National Cancer Statistics Clearing House.

Table 1.11: Age-specific and age-standardised incidence rates for breast cancer in women, by State and Territory, 1993–1996

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
0–4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5–9	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10–14	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.1
15–19	0.0	0.0	0.4	0.0	0.5	0.0	0.0	0.0	0.1
20–24	1.3	0.8	1.7	1.5	0.5	0.0	0.0	0.0	1.1
25–29	7.9	8.7	7.5	5.3	7.5	9.0	7.9	2.9	7.7
30–34	25.8	25.9	25.7	24.8	27.9	34.6	27.0	18.1	26.0
35–39	54.9	59.3	60.4	51.5	50.2	65.6	58.5	57.7	56.6
40–44	121.4	116.6	101.8	115.6	116.6	109.9	120.6	102.0	115.2
45–49	191.0	192.5	197.0	170.5	179.0	182.6	194.9	174.7	189.2
50–54	245.7	247.5	238.9	226.2	258.1	260.2	269.0	161.9	244.3
55–59	266.3	285.3	248.2	286.9	280.0	299.2	257.9	200.7	271.5
60–64	292.9	308.2	268.1	301.9	279.3	273.1	328.1	171.8	291.7
65–69	314.8	326.5	273.2	321.7	318.9	313.0	217.9	171.3	310.3
70–74	301.6	329.2	313.1	334.0	281.0	262.2	353.7	144.5	310.4
75–79	306.7	330.7	335.2	354.6	329.2	311.6	359.6	168.5	323.9
80–84	295.7	321.7	314.4	339.6	306.6	245.5	271.5	110.9	308.4
85+	260.4	262.6	349.0	354.3	297.4	236.2	264.9	133.7	285.9
All ages									
AS Rate (A)	97.5	101.3	95.1	99.3	97.3	96.9	98.9	65.2	98.0
AS Rate (W)	80.3	83.2	77.6	80.5	79.9	80.3	81.5	55.3	80.4
Ages 50–69									
AS Rate (A)	277.9	289.5	256.1	281.2	282.4	284.8	269.4	175.9	277.5
AS Rate (W)	275.6	286.9	254.9	278.2	280.3	283.1	271.4	175.8	275.3

Note: Rates are expressed per 100,000 women and age standardised to both the Australian 1991 population (A) and the World Standard Population (W).

Source: National Cancer Statistics Clearing House.

Indicator 5: Mortality from breast cancer

Table 1.12: Number of deaths from breast cancer in women by age, Australia, 1983–1996

Age group	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
0–4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5–9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10–14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15–19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20–24	0	0	0	0	2	0	1	0	2	1	0	1	1	0
25–29	6	7	10	4	10	5	7	6	12	4	2	2	5	9
30–34	20	16	39	34	31	27	35	27	26	34	40	19	26	29
35–39	58	63	80	76	77	67	68	64	81	81	75	89	58	92
40–44	89	102	96	114	126	122	140	152	153	139	118	142	122	139
45–49	128	137	164	150	132	155	173	171	181	200	206	215	211	193
50–54	199	203	190	184	210	206	216	233	237	216	230	244	226	235
55–59	238	244	251	254	249	243	221	219	232	223	257	254	253	245
60–64	304	236	278	257	275	297	293	288	263	241	282	267	273	263
65–69	249	257	275	308	259	296	303	335	312	278	322	296	323	295
70–74	257	274	249	262	262	256	256	263	311	293	269	314	294	302
75–79	169	191	209	230	235	259	266	259	254	259	304	280	287	285
80–84	144	185	169	168	169	188	209	209	215	217	262	255	264	257
85+	172	170	197	189	221	227	243	223	234	252	273	277	286	279
Total	**2,033**	**2,085**	**2,207**	**2,230**	**2,258**	**2,348**	**2,431**	**2,449**	**2,513**	**2,438**	**2,640**	**2,655**	**2,629**	**2,623**

Source: AIHW Mortality Database.

Table 1.13: Age-specific and age-standardised mortality rates for breast cancer in women, Australia, 1983–1996

Age group	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
0–4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5–9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10–14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15–19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20–24	0.0	0.0	0.0	0.0	0.3	0.0	0.2	0.0	0.3	0.1	0.0	0.1	0.1	0.0
25–29	1.0	1.1	1.5	0.6	1.5	0.7	1.0	0.8	1.7	0.6	0.3	0.3	0.7	1.3
30–34	3.3	2.6	6.2	5.4	4.8	4.1	5.2	3.9	3.7	4.7	5.5	2.6	3.6	4.0
35–39	10.4	10.9	13.3	12.2	12.3	10.6	10.5	9.7	12.2	12.0	10.9	12.8	8.1	12.6
40–44	20.5	22.6	20.3	23.0	23.5	21.4	23.5	24.6	23.9	21.7	18.2	21.6	18.3	20.5
45–49	34.2	35.5	41.2	36.6	31.3	35.6	37.9	35.7	36.0	37.1	36.0	36.1	34.2	30.2
50–54	54.2	56.1	53.1	51.5	57.1	54.6	55.5	58.1	57.4	50.9	53.0	53.9	47.5	47.2
55–59	63.6	65.2	67.1	67.9	67.8	66.8	61.2	61.0	64.7	60.9	68.4	65.9	64.0	60.1
60–64	88.5	66.2	76.4	71.1	74.7	80.3	79.1	77.7	71.1	66.0	78.4	74.8	76.5	73.7
65–69	85.5	89.0	94.0	100.3	81.9	89.9	88.4	96.1	88.8	78.8	90.6	83.5	91.2	83.2
70–74	106.0	108.6	96.1	100.0	98.1	95.7	96.3	97.2	110.2	100.2	88.6	99.0	91.0	92.3
75–79	100.0	108.4	113.6	118.9	118.2	125.8	123.8	117.4	112.6	113.1	132.2	122.9	123.0	116.9
80–84	133.0	163.8	146.4	144.4	136.5	145.7	156.2	150.0	147.9	143.3	165.5	152.5	153.1	145.5
85+	214.3	204.3	221.8	208.7	227.4	227.4	235.4	211.2	212.7	217.9	224.1	217.2	212.9	197.0
All ages														
AS Rate (A)	26.2	26.3	27.3	27.0	26.5	26.9	27.2	26.9	27.0	25.4	26.9	26.5	25.6	25.0
AS Rate (W)	20.4	20.2	21.1	20.8	20.4	20.7	20.9	20.8	20.8	19.5	20.5	20.3	19.5	19.1
Ages 50–69														
AS Rate (A)	72.0	68.2	71.5	71.3	69.6	71.9	70.1	72.2	69.6	63.3	71.5	68.6	68.5	65.0
AS Rate (W)	71.0	67.0	70.1	69.6	68.8	70.7	69.0	70.9	68.5	62.4	70.3	67.7	67.1	63.8

Note: Rates are expressed per 100,000 women and age standardised to the Australian 1991 population (A) and the World Standard Population (W).

Source: AIHW Mortality Database.

Table 1.14: Number of deaths from breast cancer in women by age, by State and Territory, 1993–1996

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
0–4	0	0	0	0	0	0	0	0	0
5–9	0	1	0	0	0	0	0	0	1
10–14	0	0	0	0	0	0	0	0	0
15–19	0	0	0	0	0	0	0	0	0
20–24	0	1	0	0	1	0	0	0	2
25–29	5	4	3	4	2	0	0	0	18
30–34	34	32	22	10	7	6	3	0	114
35–39	87	109	57	23	25	8	5	0	314
40–44	190	119	89	57	41	16	5	4	521
45–49	292	205	155	65	65	24	15	4	825
50–54	337	241	149	81	87	22	11	7	935
55–59	333	288	170	93	86	21	16	2	1,009
60–64	369	307	170	89	104	24	17	5	1,085
65–69	429	349	190	90	125	29	21	3	1,236
70–74	398	341	155	110	129	35	9	2	1,179
75–79	393	337	191	86	111	27	9	2	1,156
80–84	338	282	169	109	93	29	17	1	1,038
85+	363	316	182	90	118	33	13	0	1,115
Total	**3,568**	**2,932**	**1,702**	**907**	**994**	**274**	**141**	**30**	**10,548**

Note: Deaths in this table are derived from 'place of usual residence', and not 'place of death'.

Source: AIHW Mortality Database.

Table 1.15: Age-specific and age-standardised mortality rates for breast cancer for women by age, by State and Territory, 1993–1996

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
0–4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
5–9	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10–14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15–19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20–24	0.0	0.1	0.0	0.0	0.5	0.0	0.0	0.0	0.1
25–29	0.5	0.6	0.6	1.5	0.9	0.0	0.0	0.0	0.7
30–34	3.4	4.3	4.3	3.5	3.0	8.0	5.8	0.0	3.9
35–39	9.1	15.3	11.4	8.2	10.9	10.7	9.7	0.0	11.1
40–44	21.4	17.9	18.8	21.6	18.8	23.1	9.9	15.7	19.7
45–49	35.8	33.7	35.5	28.1	32.1	38.1	32.5	19.4	34.0
50–54	52.8	51.4	44.7	47.1	56.1	44.7	35.6	51.5	50.3
55–59	61.2	71.6	63.3	65.2	64.2	49.5	72.4	23.6	64.5
60–64	73.0	82.6	71.0	71.3	82.5	61.3	99.6	85.9	75.9
65–69	84.5	94.5	80.8	76.6	95.4	75.6	134.6	73.4	87.1
70–74	87.1	103.1	74.3	108.4	106.3	98.7	66.3	72.2	92.8
75–79	116.5	140.2	122.7	116.0	123.9	100.1	101.1	112.4	123.6
80–84	140.6	158.9	154.9	193.8	142.6	151.5	288.4	110.9	153.9
85+	196.9	221.9	216.0	203.1	230.9	236.2	313.1	0.0	212.3
All ages									
AS Rate (A)	25.1	27.9	24.7	25.6	27.0	24.6	29.0	18.5	26.0
AS Rate (W)	19.4	21.3	18.8	19.2	20.8	18.6	21.5	14.4	19.8
Ages 50–69									
AS Rate (A)	67.0	73.7	63.9	64.1	73.5	56.9	82.7	58.2	68.4
AS Rate (W)	65.9	72.3	62.7	63.2	72.1	55.8	79.4	57.2	67.1

Note: Rates are expressed per 100,000 women and age standardised to the Australian 1991 population (A) and the World Standard Population (W).

Source: AIHW Mortality Database.