

# **Cervical screening in Australia 1999–2000**

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# **Cervical screening in Australia 1999–2000**

**The Australian Institute of Health and Welfare  
and the  
Commonwealth Department of Health and Aged Care  
for the  
National Cervical Screening Program**

Australian Institute of Health and Welfare  
Canberra

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# Summary

- The total number of women who participated in cervical screening in 1999–2000 was 3,314,787 of whom 3,244,329 (98%) were in the screening program target age group of 20–69 years.
- Between the periods 1998–1999 and 1999–2000 the proportion of women in the target population (women aged 20 to 69 years) participating in cervical screening declined from 64.8% to 62.6%. Queensland data were included in 1999–2000 but not in 1998–1999. If they are excluded from both periods then the corresponding decline was from 64.8% in 1998–1999 to 63.3% in 1999–2000
- Participation in screening declined in all 5-year age groups within the target population between 1998–1999 and 1999–2000. The largest decline was in younger age groups – decreasing from 66.0% to 62.4% for women aged 25–29 years and from 52.0% to 49.5% for women aged 20–24 years.
- The recommended screening interval is 2 years following a negative smear. Of a cohort of women screened in February 1999 who had a negative Pap smear result, 32% screened again within 21 months. It is not known what proportion of this early re-screening is justified on clinical grounds.
- A low-grade abnormality includes atypia, warty atypia, possible CIN, equivocal CIN, and CIN 1, while a high-grade abnormality is defined to include CIN 1/2, CIN 2 and CIN 3 or adenocarcinoma in situ. The ratio of histologically confirmed low-grade abnormalities to high-grade abnormalities was 1.4 for Australia in 2000, the same as for 1999. The 1999 ratio does not include data for Queensland.
- In 2000, the National Cervical Screening Program detected 13,851 women in the target age group 20–69 years with high-grade abnormalities. The number of high-grade abnormalities was highest in the younger age groups. In the age groups 35–39 years or less the rate of high-grade abnormalities was over 10 per 1,000 women screened whereas it was less than 2 per 1,000 in women in the age groups 50–54 years and over.
- The number of new cases of cervical cancer declined in Australia in recent years. There were 787 new cases in Australia in 1999 compared with 1,066 new cases detected in 1988.
- Cervical cancer is the 15th most common cause of cancer mortality in women, accounting for 267 deaths in 2000. The age-standardised mortality rate from cervical cancer in the target age group, although fluctuating, declined over time from 5.0 per 100,000 women to 2.5 per 100,000 women between the years 1981 and 2000. During the same period the age-standardised cervical cancer mortality rate for all ages also declined from 6.2 per 100,000 women to 3.5 per 100,000 women.
- Women in the target age group from remote locations experienced a relatively high mortality rate from cervical cancer – 3.7 deaths per 100,000 women compared with 2.4 deaths per 100,000 women in metropolitan and rural locations. However, between the periods 1993–1996 and 1997–2000, the age-standardised cervical cancer mortality rate declined in all regions (metropolitan, rural and remote).
- Prior to 1998, only Western Australia, South Australia and the Northern Territory had Indigenous mortality registration data of sufficient quality to be publishable. In 1998, Queensland's coverage of Indigenous deaths reached an acceptable level to be included

in the analysis of Indigenous mortality data. For these jurisdictions, in the period 1997–2000 there were 22 deaths (an age-standardised mortality rate of 11.3 per 100,000 women) from cervical cancer among Indigenous women in the target age group. This is over five times the corresponding rate in non-Indigenous women (2.1 per 100,000 women). Compared with the 1995–1998 mortality rate for Indigenous women in the target age group, which was 17.5 per 100,000 women, there was a decline in mortality in the 1997–2000 period. However, these rates are based on relatively small numbers of cases and may be subject to large variability. Despite the relatively large size of the apparent decline in the rate, it is still within the range of variation that would be expected due to chance.

# National cervical screening monitoring indicators

This report monitors the performance of the National Cervical Screening Program using 10 indicators. Indicators are used as summary measures of program activity, performance and outcome. They help measure changes in disease patterns and examine the contribution health interventions may have in preventing or reducing deaths. They can also be used to assist in the evaluation of screening or other health interventions.

Screening indicators for the National Cervical Screening Program cover the areas of participation, early re-screening, low- and high-grade abnormality detection, incidence and mortality. The National Advisory Committee and state and territory cervical screening programs have endorsed these indicators. Indicators are reviewed annually and, in this report, definitions of Indicators 2 and 5 have been changed compared with the definitions used in previous reports.

A listing of the 10 indicators and their definitions follows. The target age group for the National Cervical Screening Program is 20 to 69 years.

## **Indicator 1: Participation rate for cervical screening**

Percentage of women screened, in a 24-month period by 5-year age groups (20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, 60–64, 65–69), for all ages (20+) and the target age group (20–69 years).

## **Indicator 2: Early re-screening**

Proportion of women re-screened by number of re-screens during a 21-month period following a negative smear.

## **Indicator 3: Low-grade abnormality detection**

Number of women with a histologically verified low-grade intraepithelial abnormality detected in a 12-month period as a ratio of the number of women with a histologically verified high-grade intraepithelial abnormality detected in the same period.

## **Indicator 4: High-grade abnormality detection**

Detection rate for histologically verified high-grade intraepithelial abnormalities per 1,000 women screened in a 12-month period, by 5-year age groups (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+) and for the target age group (20–69 years – age-standardised).

## **Indicator 5: Incidence of micro-invasive squamous cell carcinoma**

Incidence rate of micro-invasive squamous cell carcinoma per 100,000 estimated resident female population in a 12-month period, by 5-year age groups (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+) and for the target age group (20–69 years – age-standardised).

## **Indicator 6: Incidence of squamous, adenocarcinoma, adeno-squamous and other cervical cancer**

Incidence rate of squamous, adenocarcinoma, adeno-squamous and other cervical cancer per 100,000 estimated resident female population in a 12-month period, by 5-year age groups (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+) and for the target age group (20–69 years – age-standardised).

## **Indicator 7: Mortality**

Death rate from cervical cancer per 100,000 estimated resident female population in a 12-month period, by 5-year age groups (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+) and for the target age group (20–69 years – age-standardised).

## **Periodic indicators**

Periodic indicators have been developed to report on issues that are of importance in monitoring the outcomes of the cervical screening program over a longer period of time than 1 year. This longer period allows for a greater aggregation of information on issues that are subject to wide annual fluctuations and allows for a more confident and meaningful estimate of the outcomes. The periodic indicators presented in this report are based on a reporting period of 4 years.

## **Periodic incidence and mortality indicators by location**

### **Indicator 8: Incidence by location**

Incidence rate of cervical cancer per 100,000 estimated resident female population in a 4-year period, by geographic location<sup>1</sup> and 5-year age groups (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+) and for the target age group (20–69 years – age-standardised).

### **Indicator 9: Mortality by location**

Death rate from cervical cancer per 100,000 estimated resident female population in a 4-year period, by geographic location<sup>1</sup> and 5-year age groups (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+) and for the target age group (20–69 years – age-standardised).

Postcode and statistical local area information for incidence and mortality is routinely collected at the point of diagnosis or death. These data have been classified using the Rural, Remote and Metropolitan Areas classification (RRMA). This classification was developed in 1994 by the then Department of Primary Industries and Energy and the then Department of Human Services and Health as a framework by which various data sources could be analysed for metropolitan, rural and remote zones. The RRMA groups are classified according to Statistical Local Area based on the Australian Standard Geographical Classification (ASGC) version 2.1 (DPIE & DSHS 1994). Concordance algorithms have been developed to convert statistical local

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<sup>1</sup> See Table A for location classified by RRMA.



area information coded according to earlier and later ASGC versions into rural, remote and metropolitan area groupings.

**Table A: Structure of the Rural, Remote and Metropolitan Areas classification**

Zone	Category
Metropolitan zone	Capital cities
	Other metropolitan centres (urban centre population >100,000)
Rural zone	Large rural centres (urban centre population 25,000–99,999)
	Small rural centres (urban centre population 10,000–24,999)
	Other rural areas (urban centre population <10,000)
Remote zone	Remote centres (urban centre population >5,000)
	Other remote area (urban centre population <5,000)

Source: DPIE & DSH 1994.

## Indicator 10: Indigenous mortality

Death rate from cervical cancer per 100,000 estimated resident female population in a 4-year period by Indigenous status and 5-year age groups (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+) and for the target age group (20–69 years – age-standardised).

This indicator examines the patterns of mortality among Indigenous women.

Identification of Indigenous status is still very fragmented and generally of poor quality in health data collections, and cervical screening data are no exception. Of the seven cervical screening indicators, only one indicator can be stratified by Indigenous status: mortality. Even for this, coverage is not complete. Only Western Australia, South Australia, the Northern Territory and Queensland are currently considered to have adequate coverage of Indigenous deaths in the registration of deaths. Therefore, mortality data from these jurisdictions only are analysed in this report.

## Confidence intervals

Where indicators include a comparison between states and territories, between time periods, between geographic locations or between Indigenous and non-Indigenous women, a 95% confidence interval (CI) is presented along with the rates. This is because the observed value of a rate may vary due to chance even where there is no variation in the underlying value of the rate. The 95% confidence interval provides a probability that the difference is not due to chance. Where the confidence intervals do not overlap, there is at least 95% confidence that the change in a rate is greater than that which could be explained by chance. Where the intervals do overlap, then there is not a 95% confidence that changes in the rate are due to chance.

For example, the participation rate for New South Wales in 1998–1999 was 60.8% with a confidence interval of 60.7% to 60.9%. The corresponding rate for 1999–2000 was 60.2% with a confidence interval of 60.1% to 60.3%. These two intervals do not overlap, so there is at least 95% confidence that the difference between the 1998–1999 and 1999–2000 rates is larger than we would expect due to chance alone.

Another example is the comparison between cervical cancer mortality rates for women living in rural and remote areas. In the period 1997 to 2000 there were 2.4 cervical cancer deaths per

100,000 women living in rural areas. This rate had a confidence interval of 2.2 to 2.6. The corresponding rate for women in remote areas was 3.7 per 100,000 women, with a confidence interval of 2.2 to 5.4. These confidence intervals overlap, so despite the relatively large difference between the two observed rates there is less than 95% probability that these differences are not caused by chance. This arises from the fact that remote areas of Australia have small populations, which leads to small numbers of deaths from any specific cause, and these small numbers may fluctuate from year to year over time. This in turn leads to relatively wide confidence intervals for an observed death rate.

It is important to note that this result does not imply that the difference between the two rates is definitely due to chance. Instead, an overlapping confidence interval represents a difference in rates which is too small to differentiate between a real difference and one which is due to chance variation.

# Participation

The major objective of the National Cervical Screening Program is to reduce morbidity and deaths from cervical cancer by detecting treatable pre-cancerous lesions before their progression to cancer. Through increased participation, more women with pre-cancerous abnormalities can be detected and treated before progression to cervical cancer, thus reducing morbidity to women. In addition, increased participation will lead to the detection of more women with early stages of cancer where treatment can reduce mortality.

The program, through a variety of recruitment initiatives, actively targets women in the age group 20–69 years. The recommended screening interval for women in the target age group 20–69 years who have ever been sexually active at any stage in their lives is 2 years. Pap smears may cease at the age of 70 years for women who have had two normal Pap smears within the last 5 years. Women over 70 years who have never had a Pap smear, or who request a Pap smear, are screened.

Some women in the target population are unlikely to require screening. They include:

- those who have had a total hysterectomy with their cervix removed;
- those who have never been sexually active; and
- women with a previously diagnosed gynaecological cancer (this last group is monitored under a clinical arrangement) (Snider & Beauvais 1998).

Participation rate calculations should in principle exclude all three groups from the data. In practice, the data are adjusted to remove women who have had a hysterectomy but the latter two groups cannot be excluded due to methodological difficulties.

State and territory Programs have strategic plans in place to increase participation of women in cervical screening. Such strategies include targeting priority population-groups including Indigenous women, rural and remote women, and women from culturally and linguistically diverse backgrounds.

The objective, measurement and usefulness of participation as an indicator is outlined below:

- The participation indicator measures the proportion of the target population covered by the cervical screening program and the current screening policy of a 2-yearly interval.
- This indicator is important in assessing the contribution of the cervical screening program to changes in incidence and mortality.
- The indicator can be used as a means of evaluating recruitment practices, particularly if participation rates are analysed by demographic characteristics.
- When this indicator is used in conjunction with others, it can be used to support analysis relating to target groups and screening intervals.
- The data presented for this indicator refer to the 2-year period 1999–2000. Data for the period 1998–1999 are also included for comparison.

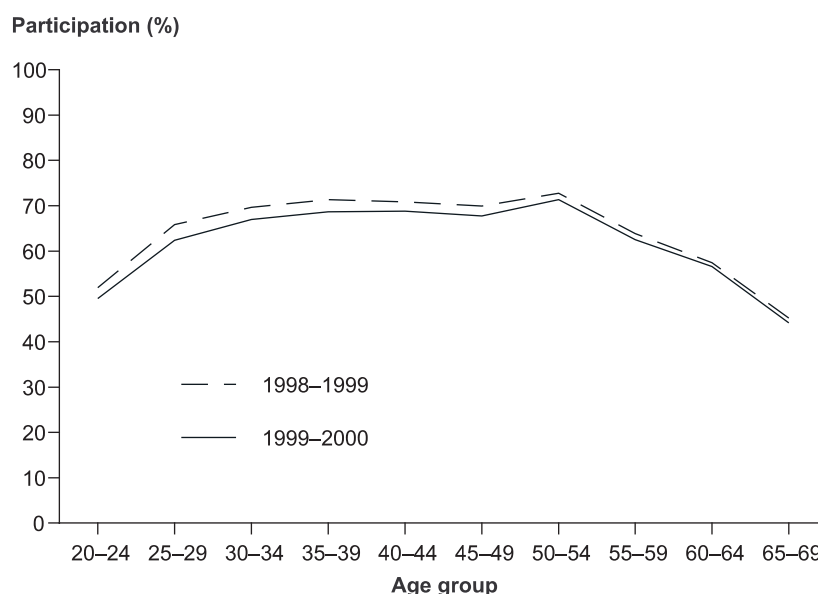
## **State- and territory-specific issues**

- Except for Western Australia and the Australian Capital Territory, the participation rates are based on all women who were screened in that state or territory. This may lead to an over-estimation of numbers of women screened because of double counting of some women between states. This may be the result of difficulty in identifying state of residence for women in border areas and inclusion of women resident overseas.
- The reference period for this indicator is from 1 January 1999 to 31 December 2000. Queensland data, however, refer to the 2-year period from March 1999 to February 2001. This is because the Queensland Pap Smear Register began in February 1999 and therefore no data are available for the earlier period.

# Indicator 1: Participation rate for cervical screening

Percentage of women screened in a 24-month period, by 5-year age groups (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+) and for the target age group (20–69 years).

The graphs and tables below refer to the data for the target age group only. For detailed data refer to Tables 1b and 2b (pages 40 and 42).



## Notes

1. Participation rates have been adjusted for the estimated proportion of women who have had a hysterectomy.
2. These data exclude women who have opted not to be on the register.

Source: AIHW analysis of state and territory Cervical Cytology Registry data.

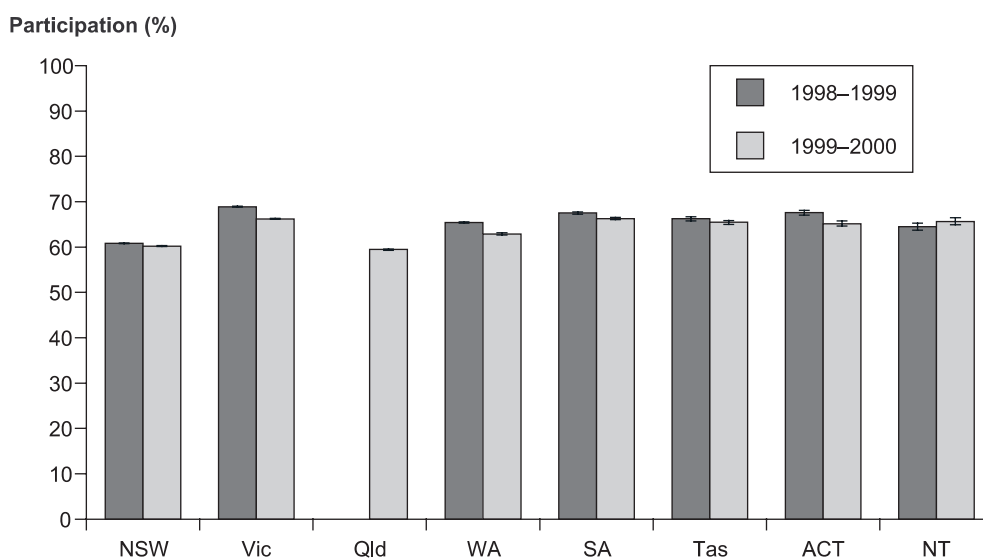
**Figure 1: Participation rates in the National Cervical Screening Program, by age group, Australia, 1998–1999 and 1999–2000**

2-year period	Age group									
	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69
	(Per cent)									
1998–1999	52.0	66.0	69.7	71.4	70.9	69.9	72.8	63.9	57.4	45.2
1999–2000	49.5	62.4	67.0	68.7	68.8	67.8	71.3	62.5	56.5	44.2

## Notes

1. The Queensland register began in February 1999; therefore no data were available for the 1998–1999 period.
2. Queensland data for the 1999–2000 period refer to the 2-year period from March 1999 to February 2001.

- In 1999–2000, 62.6% of women in the target age group 20–69 years participated in cervical screening. The proportion of women participating in screening has declined significantly between the two periods 1998–1999 and 1999–2000. Excluding Queensland data which were not included in 1998–1999 the proportion of women who participated in screening was 63.3% in 1999–2000, a statistically significant decline from 64.8% in 1998–1999.
- The total number of women screened in Australia in 1999–2000 was 3,314,787, of whom 3,244,329 (98%) were in the target age range of 20–69 years (Table 2a, page 41).
- Participation in screening is highest at the age groups 35–39 to 50–54 but declines sharply from the age group 55–59.
- Between the two reporting periods, the age-specific participation rates declined in all age groups. This decline was greatest at younger ages. Screening rates for women aged 25–29 years decreased from 66.0% to 62.4% and for women aged 20–24 years from 52.0% to 49.5%.



#### Notes

1. Rates are expressed as the percentage of the eligible female population and age-standardised to the Australian 1991 population.
2. No data were available for Queensland for the period 1998–1999 as the Queensland register began in February 1999.
3. Queensland data for the 1999–2000 period refer to the 2-year period from March 1999 to February 2001.
4. Bars on graphs represent 95% confidence intervals.

Source: AIHW analysis of state and territory Cervical Cytology Registry data.

**Figure 2: Participation (age-standardised) in the National Cervical Screening Program by women aged 20–69 years, states and territories, 1998–1999 and 1999–2000**

2-year period/ rate	NSW	Vic	Qld <sup>(a)</sup>	WA <sup>(b)</sup>	SA	Tas	ACT <sup>(b)</sup>	NT	Australia
<b>1998–1999</b>									
AS rate	60.8	68.9	n.a.	65.4	67.6	66.3	67.6	64.5	64.8
95% CI	60.7–60.9	68.8–69.0	n.a.	65.1–65.6	67.3–67.8	65.8–66.7	67.0–68.1	63.7–65.3	64.8–64.9
<b>1999–2000</b>									
AS rate	60.2	66.2	59.5	62.8	66.2	65.5	65.1	65.6	62.6
95% CI	60.1–60.3	66.1–66.3	59.3–59.6	62.6–63.1	66.0–66.5	65.0–65.9	64.6–65.7	64.9–66.4	62.5–62.6

(a) Queensland data for the 1999–2000 period refer to the 2-year period from March 1999 to February 2001.

(b) The WA and ACT Registries only register women with a valid WA or ACT address respectively.

- In 1999–2000, the proportion of women screened in the target age group of 20–69 years in states and territories varied from a high of 66.2% in Victoria and South Australia to a low of 59.5% in Queensland.
- Compared to 1998–1999, all jurisdictions except the Northern Territory experienced a decreased rate of participation in 1999–2000. The rate of decline was statistically significant in New South Wales, Victoria, Western Australia, South Australia and the Australian Capital Territory. Queensland had no data for the period 1998–1999.
- The Northern Territory registered an increased participation rate in the target age group, but the increase is not statistically significant.
- All registers except those in Western Australia and the Australian Capital Territory keep records of Pap smears for women screened in their jurisdiction but who live outside that jurisdiction. The largest proportion of interstate women recorded for 1999–2000 was in New South Wales (0.9% of all women screened in the state).



# Early re-screening

The National Cervical Screening Program seeks to maximise reductions in incidence of and mortality from cervical cancer. The design of the screening program defines two key parameters to achieve these objectives – target populations and screening intervals. Compliance with these parameters is crucial in maintaining the effectiveness of the program and in maintaining cost efficiency in order that resources may be used to increase population coverage. For most women who have a negative smear, the recommended interval before their next screen is 2 years.

This indicator is defined as the repeating of a Pap smear within 21 months of a negative smear report.

This indicator:

- tracks over a period of 21 months a cohort of women from all states and territories, who had a negative smear result in February 1999, to determine the extent of early re-screening within the National Cervical Screening Program. The exception to this is Queensland where the index month is March. February was selected as the index month nationally because it has been shown to be a relatively stable month in terms of the number of women who are screened. This pattern has been consistent over a number of years, partly because fewer women take holidays at this time;
- measures the compliance with the recommended screening interval following a negative smear; and
- is important in assessing screening coverage around the recommended interval, as significant differences may reduce program effectiveness.

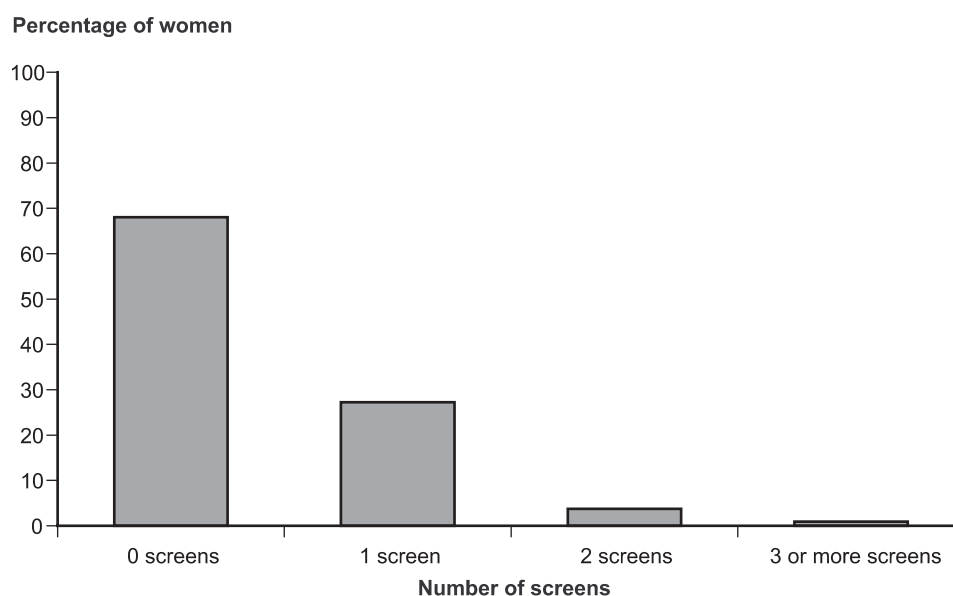
This indicator should be interpreted with caution as some early re-screening after a negative Pap smear report is appropriate and in accordance with the National Health and Medical Research Council (NHMRC) guidelines. Specifically, if a woman has a history of histologically proven high-grade abnormality, then annual screening is recommended. If a woman is being monitored after treatment or during the resolution phase of a low-grade abnormality, it is appropriate for her to be screened earlier than the 24 months interval.

## Data issues

The data published in previous reports for Indicator 2, early re-screening, are not directly comparable with the data in this report as this indicator has been modified to change the follow-up period from 24 months to 21 months. This change has been made because women often have their Pap smear taken at a time convenient to them and are likely to have their biennial screening immediately before the 24-month anniversary. Also for some women, prescriptions for oral contraceptives lapse at 22 months and the women are then likely to combine their Pap smears at their visit to the GP for renewing their scripts for contraceptives.

## Indicator 2: Early re-screening

Proportion of women re-screened, by number of re-screens during a 21-month period following a negative smear.



Refer to Table 4 (p. 43).

*Note:* The reference period for this indicator was the 21 months following the index month February 1999. For Queensland the index month was March 1999.

*Source:* AIHW analysis of state and territory Cervical Cytology Registry data.

**Figure 3: Proportion of women re-screened, by number of screens during the 21-month period following a negative smear in February 1999, Australia**

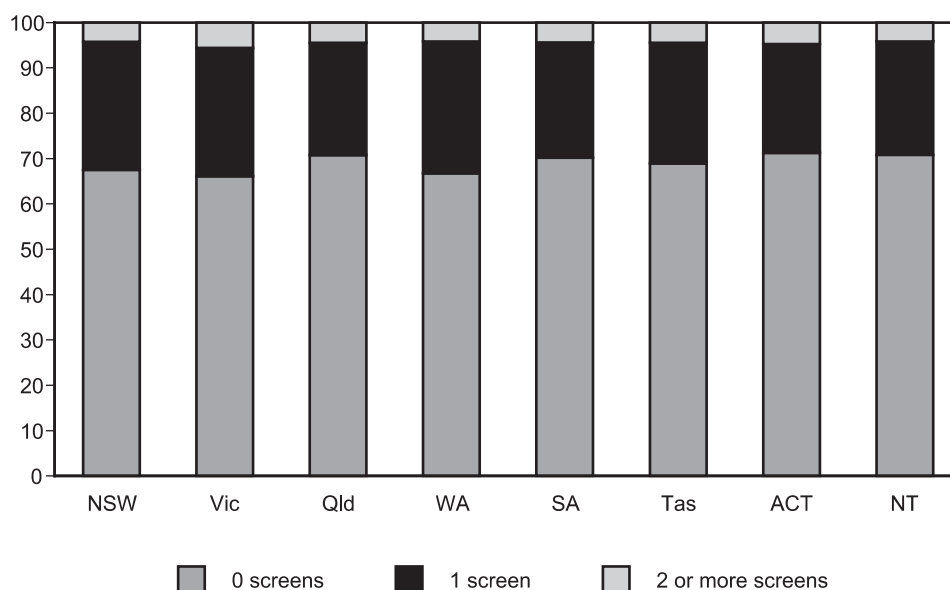
21-month period	0 screens	1 screen	2 screens	3+ screens
(Per cent)				
Feb 1999–Nov 2000	68.0	27.3	3.8	0.9

*Note:* Previously published data for this indicator refer to a cohort of women followed up for a period of 24 months. Therefore, the data published in previous reports are not directly comparable to the data published here.

This indicator, early re-screening, tracked over a period of 21 months a cohort of 175,723 Australian women who had a negative smear result in the index month to ascertain how many of them had early repeat screens.

- Of these women 68% were not re-screened in the follow-up period, 27% had one additional screening, 3.9% two additional screenings and less than 1% had 3 or more additional screenings.

Percentage of women



Refer to Table 4 (p. 43).

*Note:* The reference period for this indicator was the 21 months following the index month February 1999. For Queensland the index month was March 1999.

*Source:* AIHW analysis of state and territory Cervical Cytology Registry data.

**Figure 4: Proportion of women re-screened, by number of screens during the 21-month period following a negative smear in February 1999, states and territories**

No. of screens	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
(Per cent)									
0 screens	67.5	66.1	70.8	66.8	70.2	68.9	71.3	70.8	68.0
1 screen	28.3	28.3	24.7	29.1	25.4	26.6	24.0	25.0	27.3
2 or more	4.2	5.6	4.5	4.2	4.5	4.4	4.7	4.2	4.7

- Over 70% of the women in Queensland, South Australia, the Australian Capital Territory and the Northern Territory who had a negative Pap smear result in the index month had no additional screenings during the follow-up period of 21 months.
- The lowest proportion of women who had additional smears was in the Australian Capital Territory (28.7%) and the highest was in Victoria (33.9%).

# Low-grade abnormalities

The Pap smear test is able to identify a range of abnormalities in cervical cells. Some of these abnormalities (the so-called high-grade abnormalities) have a greater chance of becoming malignant, and are therefore treated aggressively. The chance of low-grade abnormalities progressing to malignant change is very much less.

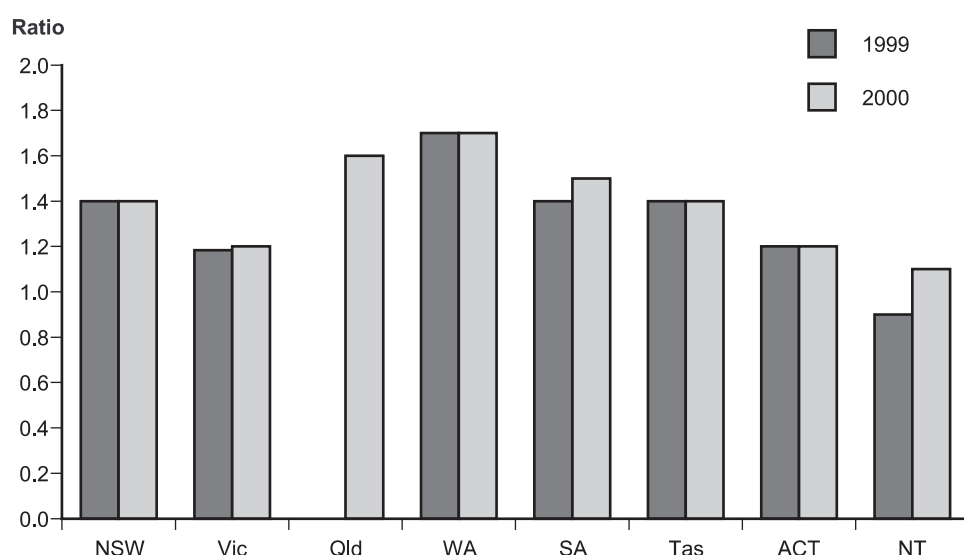
In this report a low-grade intraepithelial abnormality includes:

- atypia;
- warty atypia (human papilloma virus (HPV) effect);
- possible cervical intraepithelial neoplasia (CIN) (see Glossary);
- equivocal CIN;
- CIN 1; and
- endocervical dysplasia not otherwise specified (NOS).

The indicator is measured as the ratio of histologically verified low-grade intraepithelial abnormalities detected to histologically verified high-grade intraepithelial abnormalities.

## Indicator 3: Low-grade abnormality detection

Number of women with a histologically verified low-grade intraepithelial abnormality detected in a 12-month period as a ratio of the number of women with a histologically verified high-grade intraepithelial abnormality detected in the same period.



Refer to Tables 5a and 5b (p. 44).

Note: Data for Queensland were incomplete for 1999 as the Queensland register began in February 1999.

Source: AIHW analysis of state and territory Cervical Cytology Registry data.

**Figure 5: Ratio of low- to high-grade abnormalities, by women aged 20-69 years, states and territories, 1999 and 2000**

Year	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
	(Ratio)								
1999	1.4	1.2	n.a.	1.7	1.4	1.4	1.2	0.9	1.4
2000	1.4	1.2	1.6	1.7	1.5	1.4	1.2	1.1	1.4

- The ratio of histologically confirmed low-grade intraepithelial abnormalities to high-grade intraepithelial abnormalities in Australia in 2000 was 1.4, which was the same as for 1999 (1.4). Excluding Queensland from the 2000 data for a valid comparison, the ratio still remains at 1.4.
- The ratio of low-grade to high-grade abnormalities in 2000 varied from 1.1 in the Northern Territory to 1.7 in Western Australia. The younger age structure of the female population in the Northern Territory is partly responsible for this result as the rate of high-grade abnormalities found is much higher in women less than 35 years of age (see Indicator 4).

- Between the two periods 1999 and 2000, the ratios of low-grade to high-grade abnormalities increased in South Australia, and in the Northern Territory. In the Northern Territory, in 1999, there were more cases of high-grade than low-grade abnormalities detected but the reverse was true in 2000.

# High-grade abnormalities

High-grade lesions have a greater probability of progressing to invasive cancer than low-grade lesions. Therefore, one of the aims of the National Cervical Screening Program is to set a screening interval which detects most of these lesions before they progress and become invasive. This indicator measures the frequency of this type of abnormality in the screened community. A high-grade intraepithelial abnormality is defined in this report as CIN 1/2, CIN 2, CIN 3 or adenocarcinoma in situ.

The National Health and Medical Research Council has produced guidelines to assist in the management of women who have low- and high-grade intraepithelial abnormalities (DHS 1994b).

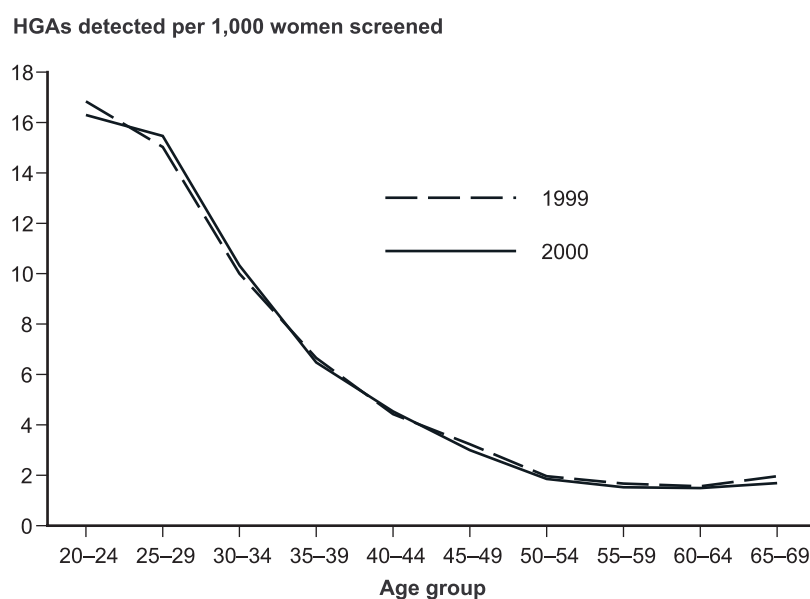
## State- and territory- specific issues

- The reference period for Indicator 4 was 12 months from January to December 2000 for all states and territories, except for Queensland where data refer to a 12-month period from March 2000 to February 2001.
- The Queensland register commenced in February 1999; therefore data for Queensland were not available for 1998–1999.

## Indicator 4: High-grade abnormality detection

Detection rate for histologically verified high-grade intraepithelial abnormalities per 1,000 women screened in a 12-month period, by 5-year age groups (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+) and for the target age group (20–69 years – age-standardised).

The graph and table below refer to the data for the target age group only. For detailed data refer to Tables 6a and 6b (pages 45 and 46).



### Notes

1. Queensland data were not available in 1999.
2. The reference period for this indicator is from January to December 2000; for Queensland it is from March 2000 to February 2001.

Source: AIHW analysis of state and territory Cervical Cytology Registry data.

**Figure 6: High-grade abnormalities per 1,000 women, by age group, Australia, 1999 and 2000**

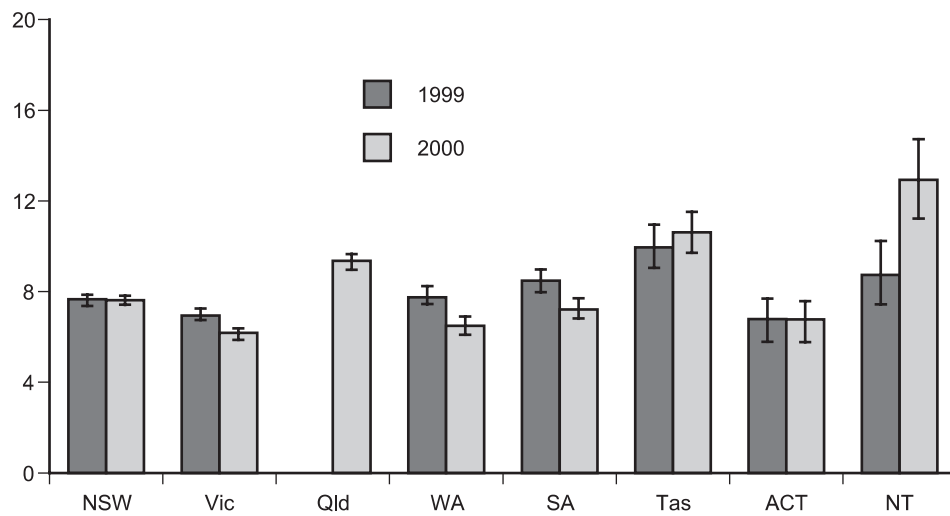
	Age group										
Year	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	20–69
	(Number per 1,000 women)										
1999	16.8	15.0	10.0	6.7	4.4	3.2	2.0	1.7	1.6	2.0	7.6
2000	16.3	15.5	10.3	6.5	4.5	3.0	1.9	1.5	1.5	1.7	7.5

Note: Queensland was included in 2000 data but not in 1999 data.



- Of the 1,864,492 women screened in the target age group 20–69 years in 2000, high-grade intra-epithelial abnormalities were detected in 7.4 per 1,000 women (13,851).
- The age-standardised rate of histologically verified high-grade abnormalities declined from 7.6 per 1,000 women screened in the target age group 20–69 years in 1999 to 7.5 per 1,000 women screened in 2000. Queensland data were not included in 1999, and, when Queensland was excluded from 2000 data for comparison, the age-standardised rate of histologically verified high-grade abnormalities for Australia in 2000 was 7.1 per 1,000 women screened, a statistically significant fall from 7.6 per 1,000 in 1999.
- High-grade abnormalities per 1,000 women are highest in the younger ages. For example, women in the age groups under 35–39 had a rate of high-grade abnormalities of 10 per 1,000 or over. In contrast, the rate of high-grade abnormalities among women in age groups above 50–54 was less than 2 per 1,000.
- Between the two periods 1999 and 2000 the age-specific rates of high-grade abnormalities detected decreased in most age groups, in particular, in the older age groups. When Queensland was excluded, the age-specific rates of high-grade abnormalities detected in 2000 declined further in every age group except in the age groups 60–64 and 65–69 where the rates remained the same as before.

HGAs detected per 1,000 women screened



Refer to Tables 9a and 9b (p. 51).

**Notes**

1. The Queensland Health Pap Smear Register began operations in February 1999; therefore, no data were available for 1999.
2. The reference period for this indicator is from January to December 2000; for Queensland, it is from March 2000 to February 2001.
3. Rates are standardised to the 1991 Australian total population.
4. Bars on graphs represent 95% confidence intervals.

Source: AIHW analysis of state and territory Cervical Cytology Registry data.

**Figure 7: Age-standardised rate of high-grade abnormalities per 1,000 women screened aged 20–69 years, states and territories, 1999 and 2000**

AS rate	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
1999	7.7	6.9	n.a	7.7	8.5	9.9	6.8	8.7	7.6
95% CI	7.4–7.9	6.7–7.2	n.a	7.4–8.2	8.0–9.0	9.0–10.9	5.8–7.7	7.4–10.2	7.4–7.7
2000	7.6	6.2	9.4	6.5	7.2	10.6	6.8	12.9	7.5
95% CI	7.4–7.8	5.9–6.4	9.0–9.7	6.1–6.9	6.8–7.7	9.7–11.5	5.8–7.6	11.2–14.7	7.4–7.6

- In 2000, the age-standardised rate of high-grade abnormalities varied considerably among states and territories. The lowest rate was observed in Victoria (6.2 per 1,000 women) and the highest rate was in the Northern Territory (12.9 per 1,000 women).
- Except in Tasmania, the Australian Capital Territory and the Northern Territory, in all jurisdictions the age-standardised rate of high-grade abnormalities declined between 1999 and 2000. In Victoria, Western Australia, and South Australia the decreases in the rates of high-grade abnormalities were statistically significant.
- In the Northern Territory and Tasmania, the rates increased between 1999 and 2000; of these, only the increase in the Northern Territory is statistically significant.

# Incidence

A major objective of the National Cervical Screening Program is to minimise the incidence of cervical cancer by detecting treatable pre-cancerous lesions before their progression to cancer. However, where these pre-cancerous lesions cannot be detected, diagnosis of cancer at its earliest stage, the micro-invasive stage, is the most desirable alternative. The next two indicators measure the incidence rates of micro-invasive and all cervical cancers in the community.

In 1994 the International Federation of Gynaecology and Obstetrics endorsed the following definition of micro-invasive carcinoma of the cervix:

Stage 1a1. Measured invasion of stroma no greater than 3 mm in depth and no wider than 7 mm.

Stage 1a2. Measured invasion of stroma greater than 3 mm and no greater than 5 mm in depth and no wider than 7 mm. The depth of invasion should not be more than 5 mm taken from the base of the epithelium, either surface or glandular, from which it originates. Vascular space involvement, either venous or lymphatic, should not alter the staging (Ostor & Mulvaney 1996).

Micro-invasive squamous cell carcinoma makes up the largest share of the micro-invasive cancer which is reported in Indicator 5. There are also other forms of micro-invasive cancers such as adenocarcinoma and adeno-squamous cell carcinoma for which data are not available to include in this indicator.

In interpreting cervical cancer incidence statistics, it should be noted that cervical screening has been available on an ad hoc basis since the 1960s, but it is only since the late 1980s and early 1990s that there has been an organised national approach to screening at a population level. The introduction of cervical screening programs may result in the paradox whereby in the short term the number of new cases of micro-invasive cancer increases because cancers are found earlier than they would have been without screening, with the rate of more advanced cancers decreasing in the longer term.

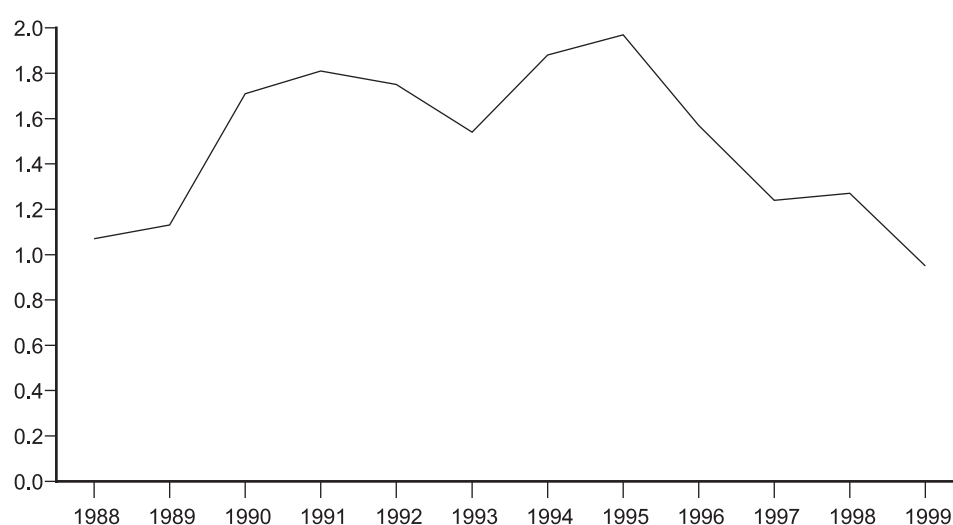
For this report the most recent national data available on incidence data are for 1999, in contrast to screening data which are available for 2000. This time lag in availability of incidence data is expected to reduce over the next 2 years.

## Indicator 5: Incidence of micro-invasive cervical cancer

Incidence rates of micro-invasive squamous cell carcinoma per 100,000 estimated resident female population in a 12-month period by 5-year age groups (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+) and for the target age group (20–69 years – age-standardised).

The graphs and tables below refer to the data for the target age group only. For detailed data refer to Table 11 (page 53).

New cases per 100,000 women



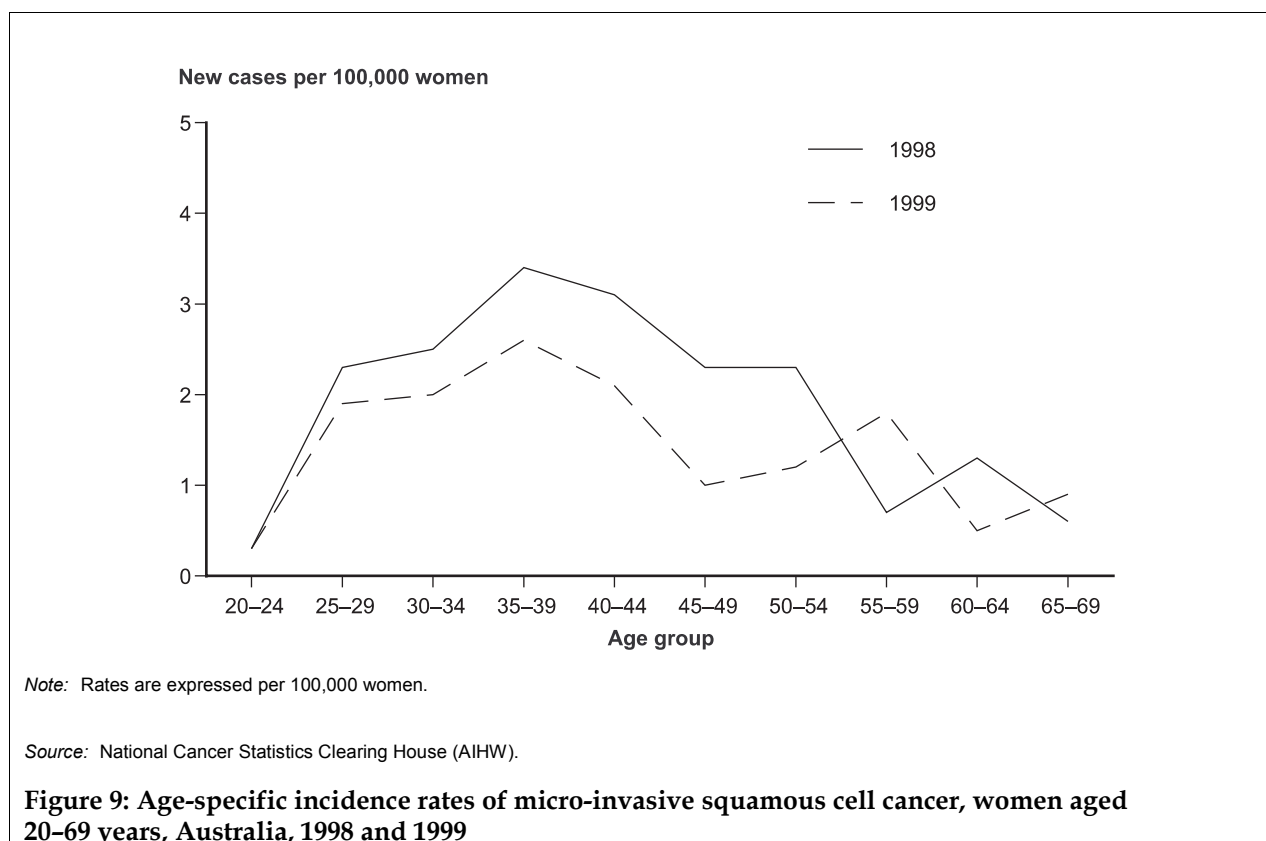
Note: Rates are expressed per 100,000 women and age-standardised to the Australian 1991 population.

Source: National Cancer Statistics Clearing House (AIHW).

**Figure 8: Age-standardised incidence rates for micro-invasive squamous cell cancer, women aged 20–69 years, Australia, 1988–1999**

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Rate per 100,000 women)											
AS rate	1.7	1.8	2.7	2.9	2.8	2.5	3.0	3.1	2.5	2.0	2.0	1.5

- The age-standardised incidence rate of micro-invasive cervical cancer was 1.4 per 100,000 women for all women in 1999, and 1.5 per 100,000 for the target age group 20–69 years (Table 11, page 53).
- In 1999 there were 95 new cases of micro-invasive cervical cancer among women of all ages, and for the target age group 20–69 years there were 92 new cases (Table 10, page 52).
- The age-standardised incidence rates for micro-invasive squamous cell carcinoma of the cervix have fluctuated during the period 1988–1999. Note that the number of cases of micro-invasive cancer is very low and the rates are therefore unstable (Tables 10 and 11, pages 52 and 53).

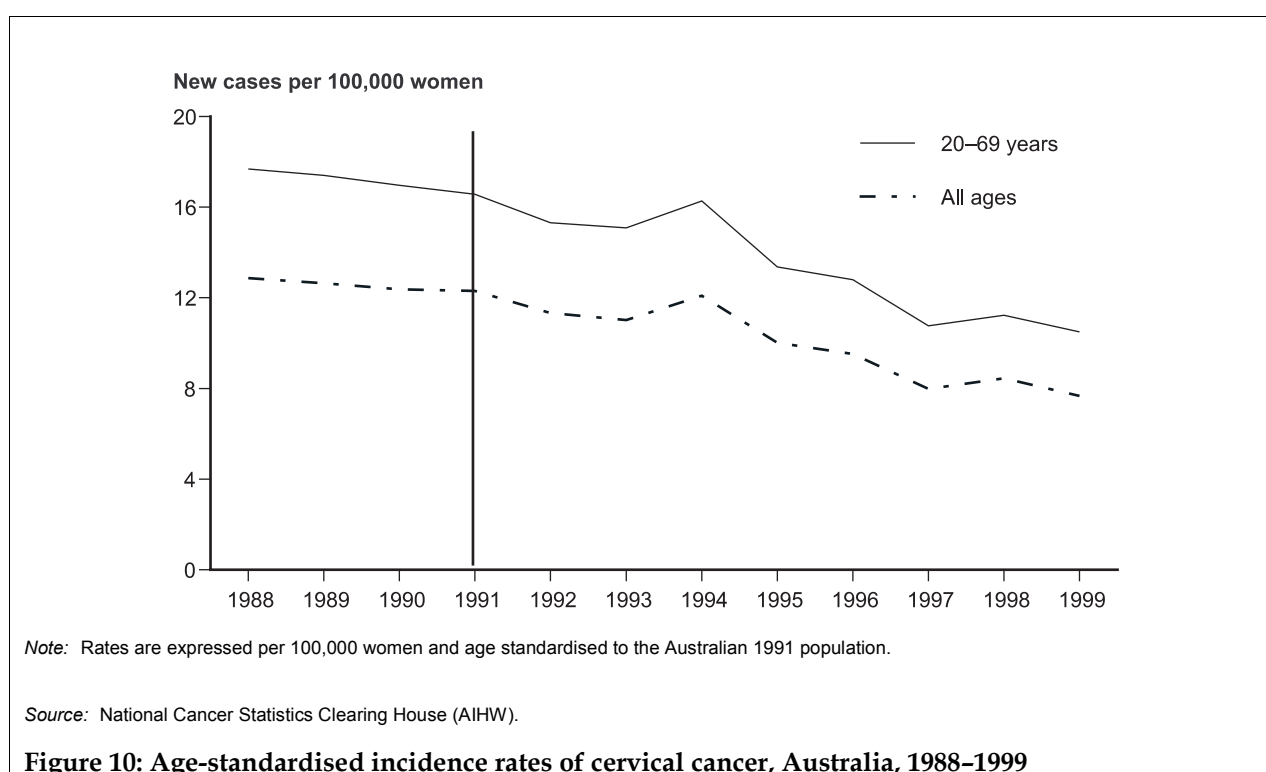


- In both 1998 and 1999, women in the age group 35–39 years had the highest incidence rate of micro-invasive squamous cell cancer. In 1999, there were 20 cases of micro-invasive squamous cell cervical cancer in women aged 35–39 years. It should be noted that the rates for age groups 45–49 and over in 1999 are based on small numbers of cases (less than 10 cases in each 5-year age group) (Tables 10 and 11, pages 52 and 53).

## Indicator 6: Incidence of invasive squamous, adenocarcinoma, adeno-squamous and other cervical cancer

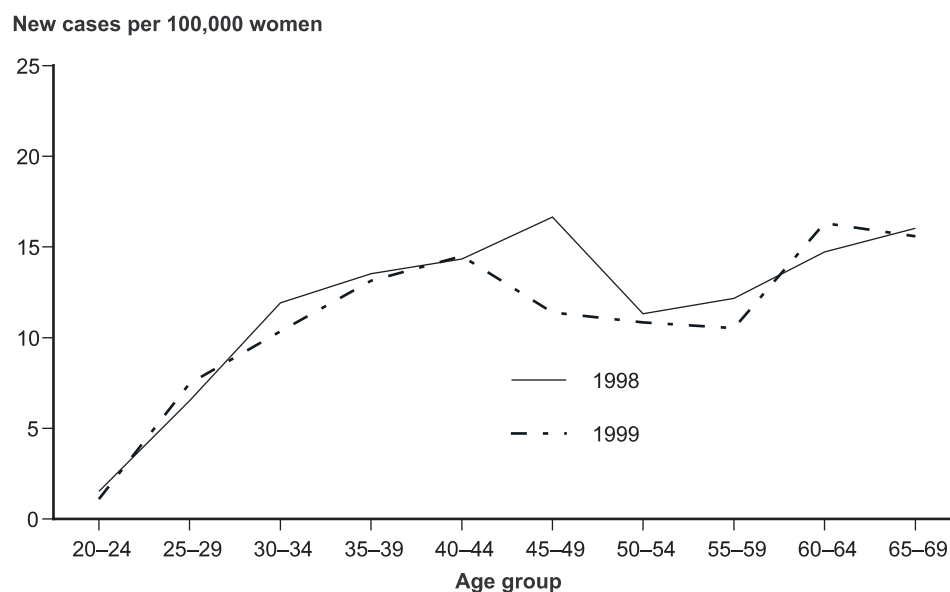
Incidence rates of squamous, adenocarcinoma, adeno-squamous and other cervical cancer per 100,000 estimated resident female population in a 12-month period, by 5-year age groups (20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84, 85+) and for the target age group (20–69 years – age-standardised).

For detailed data refer to Table 13 (page 55).



Age	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Rate per 100,000 women)											
All ages	12.9	12.6	12.4	12.3	11.3	11.0	12.1	10.0	9.5	8.0	8.4	7.7
20–69 years	17.7	17.4	17.0	16.6	15.3	15.1	16.3	13.4	12.8	10.8	11.2	10.5

- In 1999, the incidence rate of all cervical cancers declined to 7.7 per 100,000 women for all women in Australia, and 10.5 per 100,000 women in the target group (Table 13, page 55).
- In 1999, cervical cancer was the 10th most frequently diagnosed new cancer in women. There were 787 new cases of cervical cancer diagnosed in Australia in 1999, and of these 646 were women in the target age group 20–69 years (Table 12, page 54).
- Between 1988 and 1999 the age-standardised incidence rate for cervical cancer for women of all ages declined by 40.3%, and in the target age group by 40.7% (Table 13, page 55).



Refer to Table 13 (page 55).

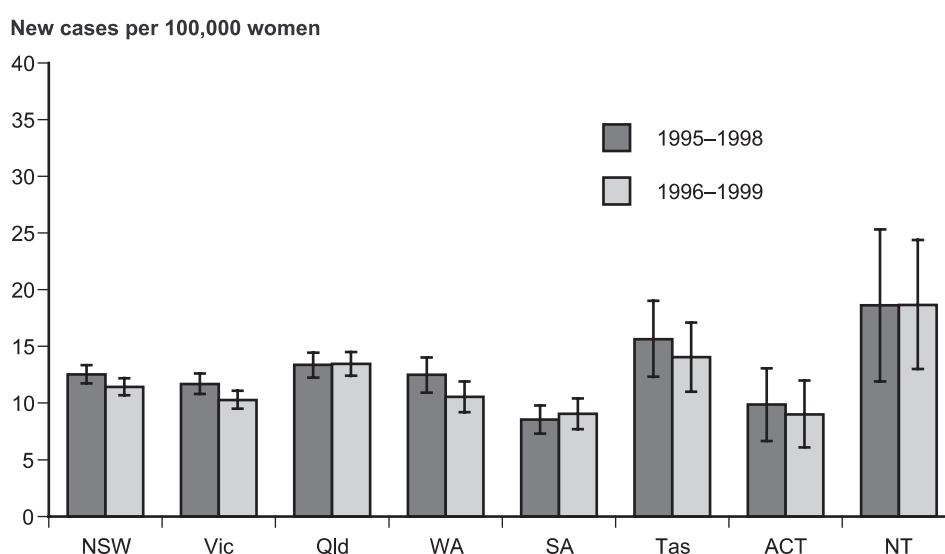
Note: Rates are expressed per 100,000 women.

Source: National Cancer Statistics Clearing House (AIHW).

**Figure 11: Age-specific incidence rates of cervical cancer, Australia, 1998 and 1999**

Year	Age group										20-69
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	
	(Rate per 100,000 women)										
1998	1.5	6.5	11.9	13.5	14.3	16.6	11.3	12.2	14.7	16.0	9.1
1999	1.1	7.5	10.3	13.1	14.5	11.4	10.8	10.5	16.3	15.6	8.2

- The age-specific rate of cervical cancer incidence rises rapidly in women from age 20-24 through to age 40-44 years; in 1999 the age-specific rate for women aged 40-44 years was 14.5 per 100,000 women. From that age, the rate declines to 10.5 at age group 55-59, and then rises again.



Refer to Tables 14b and 15b (pp. 57 and 59).

#### Notes

1. Rates are expressed per 100,000 women and age standardised to the Australian 1991 population.
2. Bars on graphs represent 95% confidence intervals.

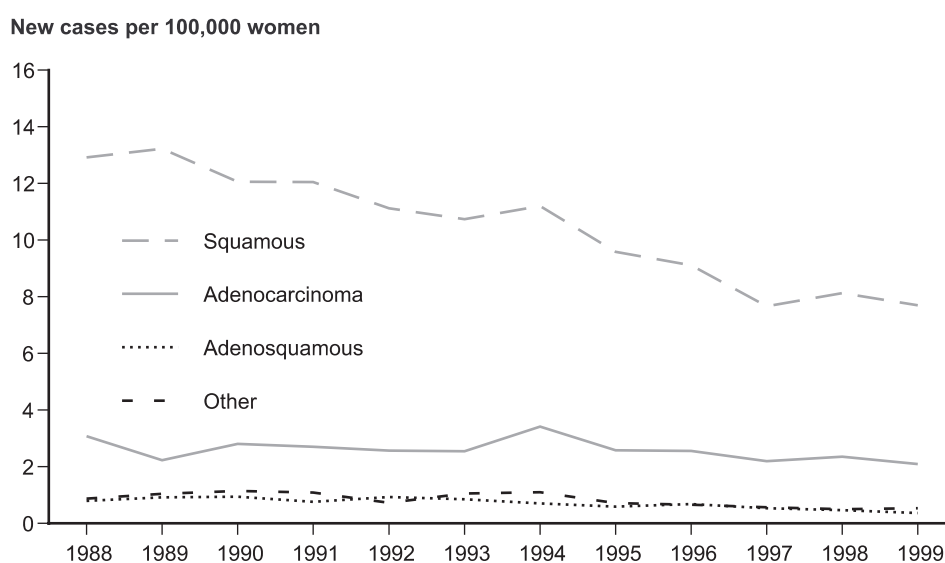
Source: National Cancer Statistics Clearing House (AIHW).

**Figure 12: Age-standardised cervical cancer incidence rates, women aged 20-69 years, states and territories, 1995-1998 and 1996-1999**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
1995-1998	12.2	11.5	13.3	12.4	8.4	15.5	9.8	21.9	12.0
95% CI	11.4-13.0	10.6-12.4	12.2-14.4	10.8-13.9	7.1-9.6	12.2-18.9	6.6-13.0	15.2-28.6	11.6-12.5
1996-1999	11.4	10.3	13.5	10.6	9.1	14.1	9.0	18.7	11.3
95% CI	10.7-12.2	9.5-11.1	12.4-14.5	9.2-11.9	7.7-10.4	11.0-17.1	6.1-12.0	13.0-24.4	10.9-11.7

- There were considerable differences in the incidence of cervical cancer among states and territories for women aged 20-69 years. In the period 1996-1999, the Australian Capital Territory had the lowest incidence at 9.0 per 100,000 women while the Northern Territory had the highest rate of cervical cancer incidence of 18.7 per 100,000 women. Both Queensland (13.5) and the Northern Territory (18.7) were significantly above the national average (11.3) while South Australia (9.1) was significantly below.
- Between the two periods 1995-1998 and 1996-1999 the incidence rate declined in all states and territories except in Queensland and South Australia. However, the decline is not statistically significant (Tables 14b and 15b, pages 57 and 59).





Refer to Table 16b (page 60).

*Note:* Rates are expressed per 100,000 women and age-standardised to the Australian 1991 population.

*Source:* National Cancer Statistics Clearing House (AIHW).

**Figure 13: Age-standardised incidence rates of cervical cancer by histological type, women aged 20–69 years, Australia, 1988–1999**

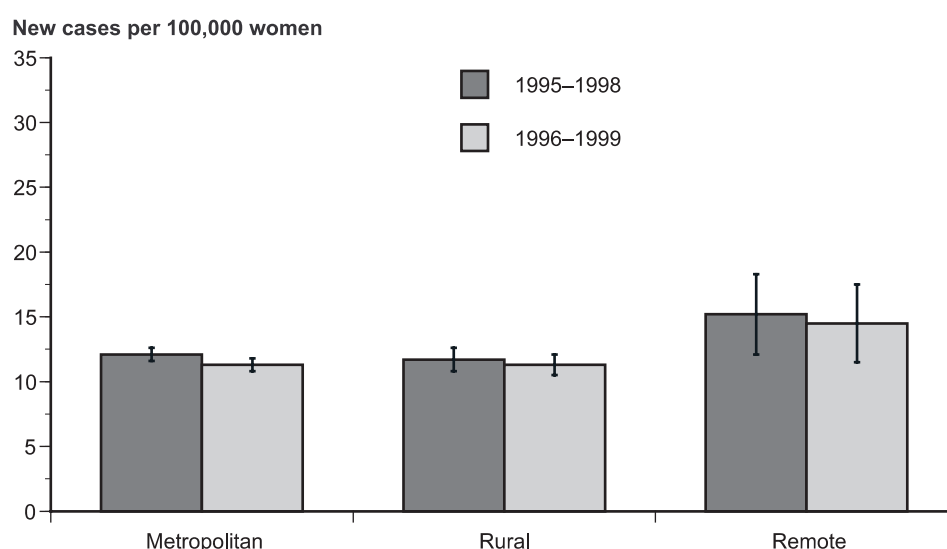
Histological type	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Squamous	12.9	13.2	12.1	12.0	11.1	10.7	11.2	9.6	9.1	7.7	8.1	7.7
Adenocarcinoma	3.1	2.2	2.8	2.7	2.6	2.5	3.4	2.6	2.6	2.2	2.4	2.1
Adeno-squamous	0.8	0.9	0.9	0.8	0.9	0.9	0.7	0.6	0.7	0.5	0.5	0.4
Other	0.9	1.0	1.2	1.1	0.7	1.1	1.1	0.7	0.7	0.6	0.5	0.5

- In 1999, squamous cell carcinomas of the cervix accounted for approximately 71.8% of all new cases of cervical cancer in women aged 20–69 years, adenocarcinomas 19.5%, adeno-squamous 3.6% and a range of other mixed and unknown histologies comprised the remaining 5.1% (Table 16a, page 60).

## Indicator 8: Incidence by location

Incidence rates of cervical cancer per 100,000 estimated resident female population in a 4-year period, by location and 5-year age groups (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+) and for the target age (20–69 years – age-standardised).

The graph and table below refer to the data for the target age group only. For detailed data refer to Table 19 (page 63).



### Notes

1. The age-standardised rates are presented as 4-year rolling blocks of data. These years were selected to be comparable with the mortality by location indicator presented later in this report.
2. Rates are expressed per 100,000 women and age standardised to the Australian 1991 population.
3. Bars on graphs represent 95% confidence intervals.

Source: National Cancer Statistics Clearing House (AIHW).

**Figure 14: Age-standardised incidence rates of cervical cancer, by location, women aged 20–69 years, Australia, 1995–1998 and 1996–1999**

	Metropolitan		Rural		Remote	
	1995–1998	1996–1999	1995–1998	1996–1999	1995–1998	1996–1999
AS rate	12.1	11.3	11.7	11.3	15.2	14.5
95% CI	11.6–12.6	10.8–11.8	10.8–12.6	10.5–12.1	12.1–18.3	11.5–17.5

- In the 4-year period 1996–1999 there were 2,432 new cases (72% of all new cases) of cervical cancer in metropolitan locations, 840 new cases (25% of all new cases) in rural locations and 102 new cases (3% of all new cases) in remote locations (Table 18, page 62).
- In the period 1996–1999, the age-standardised cervical cancer incidence rate for women in the target age group 20–69 years was higher in remote locations (14.5 per 100,000 women) than in metropolitan and rural locations. This difference was not statistically significant. During the same period, the corresponding rates of cervical cancer incidence in both metropolitan and rural locations were 11.3 per 100,000 women (Table 19, page 63).
- The age-standardised incidence rate of cervical cancer in all locations for women aged 20–69 years declined between the periods 1995–1998 and 1996–1999. However, the decline is not statistically significant.

### **Age-specific features**

- Very few cervical cancers occur in women under the age of 20. The incidence rate of cervical cancer increases with age.
- Between the periods 1995–1998 and 1996–1999 age-specific rates for the incidence of cervical cancer declined in almost all ages in metropolitan and rural areas. However, the age pattern of cervical cancer incidence in remote areas shows fluctuations between the same periods. This may be due to the small numbers of cervical cancer occurring in these areas.

# Mortality

Cancer of the cervix is one of the few cancers for which there is an efficacious screening test for detection of precursors of the disease at a pre-cancerous stage, and most deaths due to cervical cancer are potentially avoidable (Marcus & Crane 1998). However, some deaths do occur and the objective of the National Cervical Screening Program is to reduce this mortality rate.

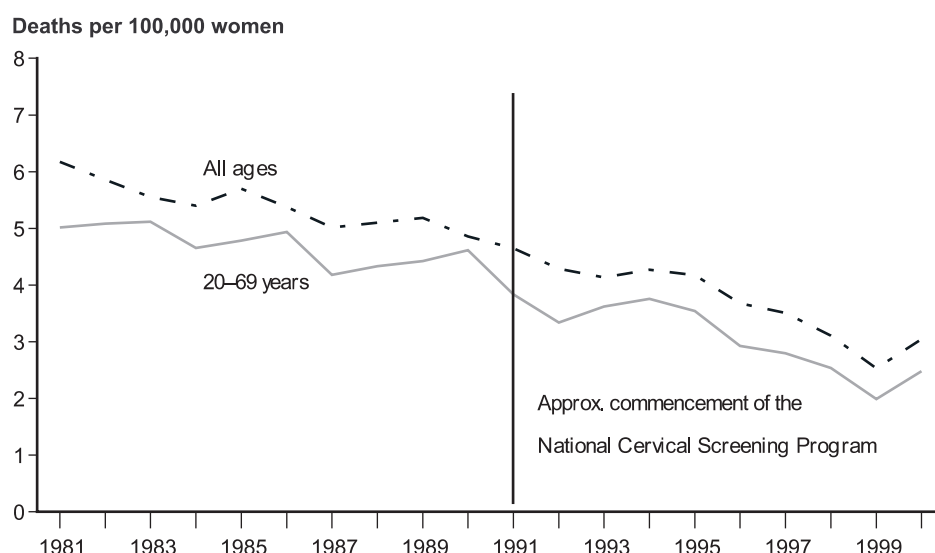
These indicators measure the level of mortality from cervical cancer in the total female population by age and other demographic characteristics. This indicator is important because from it an assessment can be made of changes in mortality in different age groups and particular target groups over time. However, it should be noted that changes in the mortality rates may not be evident for a number of years following an improvement in the participation rate. Therefore the effectiveness of this measure needs to be viewed in the longer rather than the shorter term.

## Data issues

- Two major changes that have occurred in the classification and processing of Australian mortality data require some caution when interpreting mortality data over time. They are:
  1. the introduction of the tenth revision of the International Classification of Diseases (ICD-10) for classifying deaths registered from 1 January 1999; and
  2. the introduction of the Automated Coding System (ACS) for processing deaths registered from 1 January 1997.
- As a result of this there is now a break in the mortality data series. In order to make mortality data coded using ICD-9 and ICD-10 comparable, the Australian Bureau of Statistics (ABS) has derived comparability factors to adjust data based on ICD-9. These comparability factors are derived from the movements in the underlying causes of death coded in ICD-9 compared to ICD-10 (ABS 2000).
- For cervical cancer deaths, the comparability factor is 0.98, and the pre-1997 mortality data presented in this report have been adjusted accordingly. The effect of this is that the pre-1997 number of deaths appearing in this report are different from figures in previous *Cervical Screening in Australia* reports.
- Prior to 1998, only South Australia, Western Australia and the Northern Territory had a relatively high coverage of Indigenous status identification in the deaths data. In 1998 Queensland's coverage of Indigenous deaths reached an acceptable level following the introduction of a new *Death Information Form* in 1996-97 which included a question on Indigenous status (ABS 1999). Therefore, in this report, cervical cancer deaths for Indigenous Australians include data from Queensland (for 1998 to 2000), South Australia, Western Australia and the Northern Territory.

## Indicator 7: Mortality

Death rates from cervical cancer per 100,000 estimated resident female population in a 12-month period by 5-year age groups (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+) and for the target age group (20–69 years – age-standardised).



Refer to Table 21 (p. 65).

### Notes

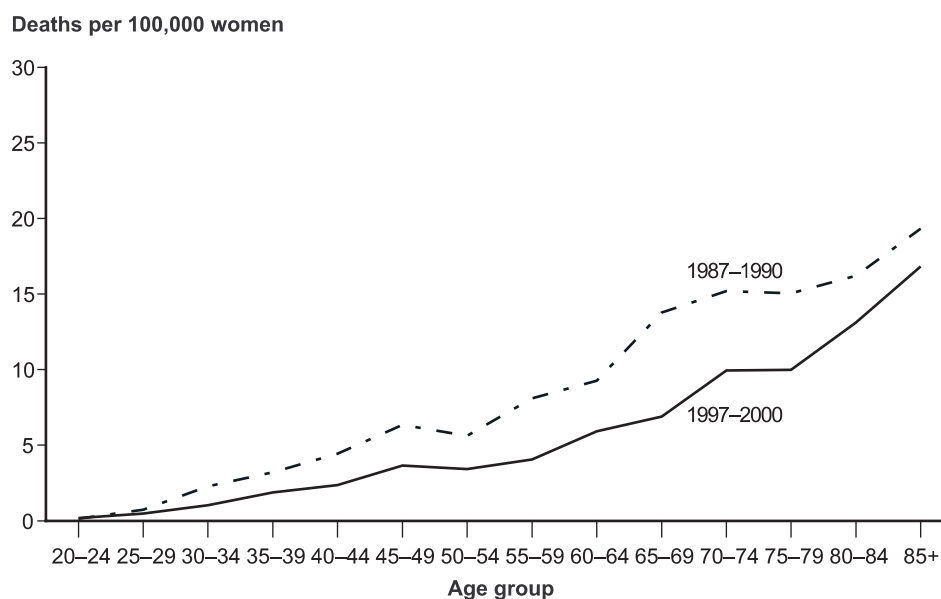
1. Rates are expressed per 100,000 women.
2. Deaths were derived from place of usual residence and by year of registration
3. Rates for all ages are based on data for women aged 15 years and over.
4. Rates are expressed per 100,000 women and age-standardised to the Australian 1991 population.

Source: AIHW Mortality Database.

**Figure 15: Age-standardised death rates from cervical cancer, Australia, 1981–2000**

	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00
All ages	6.2	5.9	5.5	5.4	5.7	5.4	5.0	5.1	5.2	4.9	4.6	4.3	4.1	4.3	4.2	3.7	3.5	3.1	2.5	3.0
20–69 years	5.0	5.1	5.1	4.7	4.8	4.9	4.2	4.3	4.4	4.6	3.8	3.3	3.5	3.8	3.6	2.9	2.8	2.5	2.0	2.5

- Cervical cancer was the 15th most common cause of cancer deaths in Australian women in 2000, accounting for 267 deaths.
- The age-standardised death rate for women of all ages was 3.0 per 100,000 in 2000. Mortality from cervical cancer, although fluctuating, has declined over time.



**Notes**

1. Rates are expressed per 100,000 women.
2. Deaths were derived from place of usual residence and by year of registration.

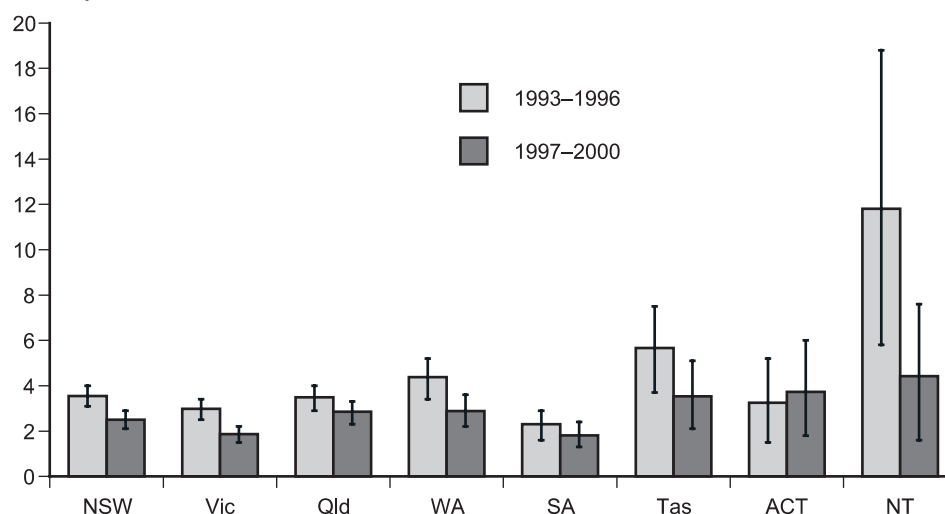
Source: AIHW Mortality Database.

**Figure 16: Age-specific cervical cancer death rates, by age group, Australia, 1987-1990 and 1997-2000**

Period	Age group													
	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+
1987-1990	0.1	0.7	2.3	3.2	4.4	6.3	5.6	8.1	9.3	13.8	15.2	15.0	16.2	19.3
1997-2000	0.2	0.5	1.0	1.9	2.4	3.7	3.4	4.1	5.9	6.9	9.9	10.0	13.1	16.8

- The age-specific rates of cervical cancer mortality increased with rising age – very few deaths occurred at younger ages while most deaths concentrated at older ages. In the period 1997-2000, within the target age group, the age-specific mortality ranged from 0.2 deaths per 100,000 women in the age group 20-24 to 6.9 deaths per 100,000 women in the age group 65-69.
- The age-specific mortality between the two reference periods declined in all age groups except for the age group 20-24 years.

Deaths per 100,000 women



Refer to Tables 23 and 25 (pp. 67 and 69).

#### Notes

1. The age-standardised rates were averaged over 4 years to smooth annual variations that may occur in the smaller states and territories.
2. Deaths derived from place of usual residence and by year of registration.
3. Rates are expressed per 100,000 women and age-standardised to the Australian 1991 population.
4. Bars on graphs represent 95% confidence intervals.

Source: AIHW Mortality Database.

**Figure 17: Age-standardised cervical cancer death rates, women aged 20-69 years, states and territories, 1993-1996 and 1997-2000**

	NSW	VIC	QLD	WA	SA	Tas	ACT	NT	Australia
Rate 1993-1996	3.5	3.0	3.5	4.4	2.3	5.7	3.2	11.8	3.4
95% CI	3.1-4.0	2.5-3.4	2.9-4.0	3.4-5.2	1.6-2.9	3.7-7.5	1.5-5.2	5.8-18.8	3.2-3.7
Rate 1997-2000	2.5	1.9	2.9	2.9	1.8	3.5	3.7	4.4	2.4
95% CI	2.1-2.9	1.5-2.2	2.3-3.3	2.2-3.6	1.3-2.4	2.1-5.1	1.8-6.0	1.6-7.6	2.2-2.6

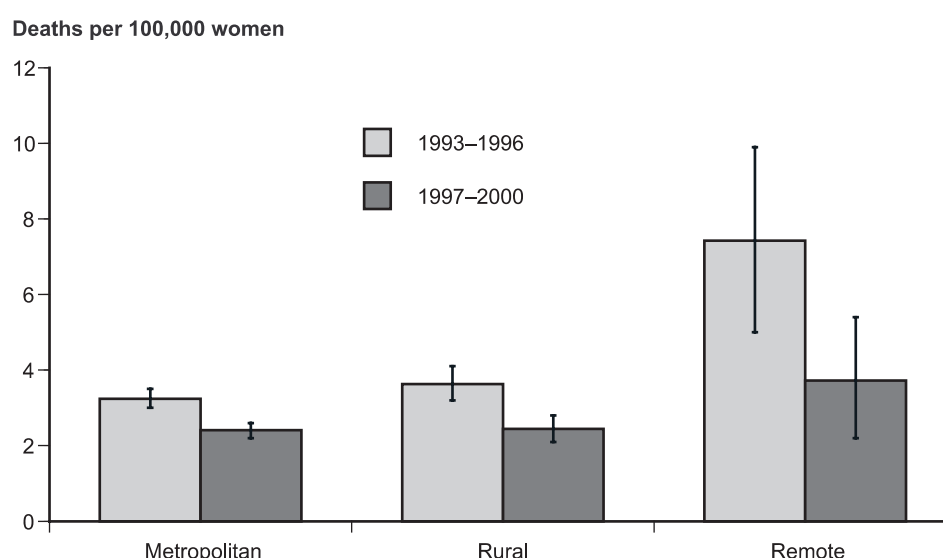
- There were 1,046 deaths from cervical cancer in all states and territories in 1997–2000.
- The age-standardised mortality rates varied from 4.4 per 100,000 women in the Northern Territory to 1.8 per 100,000 women in South Australia. Although the Northern Territory mortality rate declined considerably between the two periods, the rates are based on a very small number of deaths and are therefore subject to great variability.
- In all jurisdictions except the Australian Capital Territory the death rate declined between the two periods. Only the declines in New South Wales and Victorian rates, however, are statistically significant.
- The mortality rate in the Australian Capital Territory increased between the two periods; this increase is not statistically significant.



## Indicator 9: Mortality by location

Death rates from cervical cancer per 100,000 estimated resident female population in a 4-year period, by location and 5-year age groups (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+) and for the target age group (20–69 years – age-standardised).

The graph and table below refer to the data for the target age group only. For additional data refer to Tables 26 and 27, pages 70 and 71)



### Notes

1. The age-standardised rates are presented as 4-year rolling blocks of data.
2. Deaths were derived from place of usual residence and by year of registration.
3. Rates are expressed per 100,000 women and age-standardised to the Australian 1991 population.
4. Bars on graphs represent 95% confidence intervals.

Source: AIHW Mortality Database.

**Figure 18: Age-standardised cervical cancer death rates, by location, women aged 20–69 years, 1993–1996 and 1997–2000**

	Metropolitan		Rural		Remote	
	1993–1996	1997–2000	1993–1996	1997–2000	1993–1996	1997–2000
Rate	3.2	2.4	3.6	2.4	7.4	3.7
95% CI	3.0–3.5	2.2–2.6	3.2–4.1	2.1–2.8	5.0–9.9	2.2–5.4

- During the 4-year period 1997–2000 there were 735 deaths (70% of all cervical deaths in that period) in metropolitan areas, 276 deaths (26% of all cervical deaths) in rural areas and 35 deaths (4% of all cervical deaths) in remote areas (Table 26, page 70).
- The age-standardised death rate for women in the target age group 20–69 years was highest in remote locations. The difference was statistically significant from other locations in the period 1993–1996, but during the period 1997–2000, the difference was not statistically significant. The high rate of mortality in remote locations may reflect the relatively high proportion of Indigenous people in remote areas, and the high death rates among Indigenous women. Both metropolitan and rural locations had similar rates of mortality from cervical cancer.
- In all three regions the age-standardised mortality rates declined between the periods 1993–1996 and 1997–2000; however, only the declines in metropolitan and rural areas were statistically significant. The largest overall mortality reduction was in remote areas (a mortality reduction of 50% between 1993–1996 and 1997–2000), but these rates are based on small numbers and therefore the decline is not statistically significant. Between the same two periods, in metropolitan areas, there was a 25% decline in cervical cancer mortality and in rural areas, it was 33%.

### **Age-specific features**

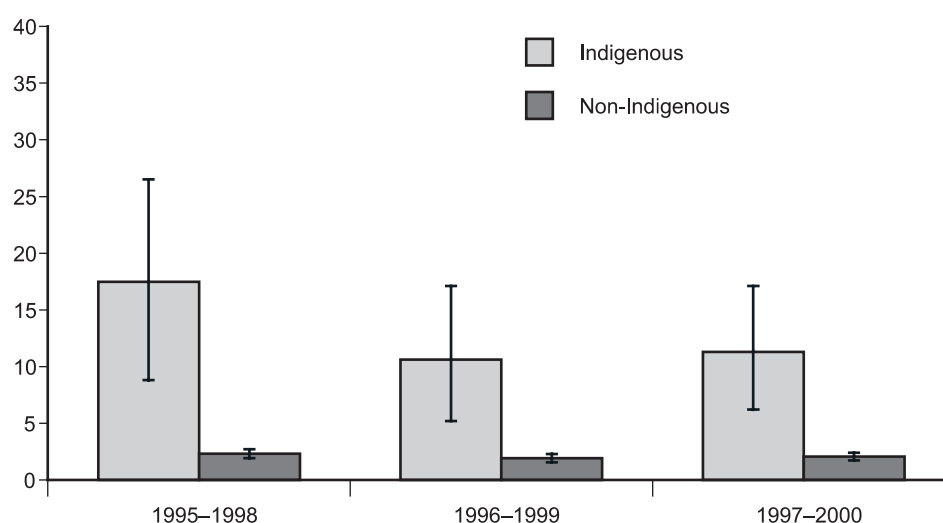
- In the target age group of 20–69 years, age-specific mortality from cervical cancer increases with age. However, it is higher still among women in their 70s and 80s.

## Indicator 10: Indigenous mortality

Death rates from cervical cancer per 100,000 estimated resident female population in a 4-year period, by Indigenous status and 5-year age groups (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+) and for the target age group (20–69 years – age-standardised).

The graph and table below refer to the data for the target age group only. For detailed data refer to Tables 28 and 29 (pages 72 and 73).

Deaths per 100,000 women



### Notes

1. The age-standardised rates are presented as 4-year rolling blocks of data.
2. Deaths were derived from place of usual residence and by year of registration.
3. Rates are expressed per 100,000 women and age-standardised to the Australian 1991 population.
4. Only Queensland (from 1998), South Australia, Western Australia and the Northern Territory have Indigenous death registration data considered to be of a publishable standard.
5. Bars on graphs represent 95% confidence intervals.

Source: AIHW Mortality Database.

**Figure 19: Age-standardised cervical cancer mortality rates, by Indigenous status, women aged 20–69 years, 1995–1998, 1996–1999 and 1997–2000**

	Indigenous			Non-Indigenous		
	1995–1998	1996–1999	1997–2000	1995–1998	1996–1999	1997–2000
AS rate	17.5	10.6	11.3	2.3	1.9	2.1
95% CI	8.8–26.5	5.2–17.1	6.2–17.1	1.9–2.7	1.6–2.3	1.7–2.4

Note: Indigenous and non-Indigenous deaths from Queensland for 1998, 1999 and 2000 are included in the above table.

- Due to the difficulties of Indigenous identification in health data collections, only Indigenous mortality data from Queensland (from 1998), Western Australia, South Australia and the Northern Territory are considered to be of publishable standard. Therefore, all cervical cancer mortality data for both Indigenous women and non-Indigenous women used in this analysis are confined to these jurisdictions.
- There were 22 deaths, an age-standardised rate of 11.3 per 100,000 women, attributable to cervical cancer among Indigenous women in the target age group in 1997–2000 period. This is over 5 times the mortality rate for non-Indigenous women in the same age range (2.1 per 100,000 women) (Tables 28 and 29, pages 72 and 73).
- The Indigenous cervical cancer mortality rate among women in the target age group declined over time from 17.5 in 1995–1998 to 11.3 deaths per 100,000 women in 1997–2000. The Queensland data only cover part of this period, so their inclusion may effect the comparison. When Queensland data were excluded from the analysis, the Indigenous mortality rate from cervical cancer still declined from 22 in 1995–1998 to 15.1 per 100,000 women in 1997–2001. However, the death rates for Indigenous women are based on relatively small numbers of cases and may be subject to large variability. This is reflected in the wide confidence intervals associated with the mortality rates. Despite the relatively large size of the apparent decline in the rate, it is still within the range of variation that would be expected due to chance, that is, it is not statistically significant (Table 29, page 73).
- Mortality from cervical cancer among non-Indigenous women fluctuated over time.

### **Age-specific features**

- The numbers of deaths among Indigenous women in Queensland, Western Australia, South Australia and the Northern Territory are either very small or none in many age groups and care is needed in interpreting the rates.
- Mortality rates generally increased with increasing age in both Indigenous and non-Indigenous women.
- Compared with non-Indigenous women, Indigenous women experienced high rates of mortality in every age group.

# Tables

## Indicator 1: Participation rate for cervical screening

**Table 1a: Number of women participating in the National Cervical Screening Program, by age, states and territories, 1998–1999**

Age group	NSW	Vic	WA <sup>(a)</sup>	SA <sup>(b)</sup>	Tas	ACT <sup>(a)</sup>	NT	Total
20–24	105,105	89,660	36,858	27,282	9,466	6,803	4,700	279,874
25–29	152,831	128,002	47,821	36,257	11,298	8,589	6,208	391,006
30–34	154,747	129,131	48,370	37,393	11,482	8,293	5,586	395,002
35–39	158,287	129,303	49,374	39,258	12,479	8,350	4,963	402,014
40–44	135,791	112,158	43,327	35,207	10,685	7,563	4,050	348,781
45–49	114,246	96,199	35,585	30,489	9,030	7,019	3,321	295,889
50–54	91,705	77,518	26,608	24,842	7,222	5,785	2,217	235,897
55–59	61,286	52,870	17,411	16,762	4,845	3,404	1,273	157,851
60–64	45,955	41,426	13,272	13,327	3,689	2,177	641	120,487
65–69	32,950	32,337	9,512	10,243	2,753	1,413	355	89,563
70–74	14,341	12,107	3,656	7,043	842	583	147	38,719
75–79	5,440	4,559	1,311	n.a.	334	198	72	11,914
80+	2,051	2,055	431	n.a.	134	67	23	4,761
Not stated	5,485	n.a.	n.a.	31	7	15	28	5,566
<b>All ages</b>	<b>1,080,220</b>	<b>907,325</b>	<b>333,536</b>	<b>278,134</b>	<b>84,266</b>	<b>60,259</b>	<b>33,584</b>	<b>2,777,324</b>
Ages 20–69 years	1,052,903	888,604	328,138	271,060	82,949	59,396	33,314	2,716,364

(a) The WA and ACT registers only register women with a valid WA or ACT address respectively.

(b) South Australia has grouped women aged 70 years or more, and for the purpose of this table, they appear in the 70–74 age group.

### Notes

- These numbers may be over-estimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate Registers and inclusion of women resident overseas.
- The Queensland Health Pap Smear Register began operations in February 1999. Hence no data are available for 1998–1999.

Source: AIHW analysis of state and territory Cervical Cytology Registry data.

**Table 1b: Proportion of women participating in the National Cervical Screening Program, by age, states and territories, 1998–1999**

Age group	NSW	Vic	WA <sup>(a)</sup>	SA <sup>(b)</sup>	Tas	ACT <sup>(a)</sup>	NT	Total
(Per cent)								
20–24	48.1	53.6	54.7	55.9	63.7	51.9	59.7	52.0
25–29	62.3	69.2	67.6	68.9	70.1	65.4	65.8	66.0
30–34	66.6	72.9	71.2	71.5	71.6	69.3	66.9	69.7
35–39	67.9	75.5	72.3	72.9	72.4	71.5	67.7	71.4
40–44	67.2	74.9	71.2	74.0	70.0	71.8	68.0	70.9
45–49	66.1	74.7	68.8	72.2	68.8	73.1	71.1	69.9
50–54	68.5	78.0	70.7	75.4	71.1	82.4	70.6	72.8
55–59	59.2	69.6	61.9	66.9	60.7	74.3	67.0	63.9
60–64	52.0	63.6	57.5	61.2	54.1	66.1	53.8	57.4
65–69	39.1	52.2	45.7	48.5	42.3	51.7	44.9	45.2
<b>All ages</b>								
Crude rate	56.9	64.1	61.9	62.2	60.9	64.2	64.9	60.6
AS rate	56.2	63.8	60.4	62.8	60.9	62.6	60.4	60.0
95% CI	56.1–56.3	63.6–63.9	60.2–60.6	62.5–63.0	60.5–61.4	62.1–63.1	59.7–61.2	59.9–60.0
<b>Ages 20–69 years</b>								
Crude rate	61.4	69.3	66.1	68.1	66.8	67.8	65.8	65.4
AS rate	60.8	68.9	65.4	67.6	66.3	67.6	64.5	64.8
95% CI	60.7–60.9	68.8–69.0	65.1–65.6	67.3–67.8	65.8–66.7	67.0–68.1	63.7–65.3	64.8–64.9

(a) The WA and ACT registers only register women with a valid WA and ACT address respectively.

(b) South Australia has grouped all women aged 70 years or more, and for the purposes of this table they appear in the 70–74 age group.

**Notes**

1. These numbers may be over-estimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas.
2. The Queensland Health Pap Smear Register began operations in February 1999. Hence no data are available for 1998–1999.
3. Rates are standardised to the 1991 Australian total population.

Source: AIHW analysis of state and territory Cervical Cytology Registry data.

**Table 2a: Number of women participating in the National Cervical Screening Program, by age, states and territories, 1999–2000**

Age group	NSW	Vic	Qld	WA <sup>(a)</sup>	SA <sup>(b)</sup>	Tas	ACT <sup>(a)</sup>	NT	Australia
20–24	99,812	83,943	64,583	34,401	25,727	8,939	6,354	4,587	328,346
25–29	147,289	120,835	82,879	44,631	33,896	10,398	8,083	6,067	454,078
30–34	151,934	125,001	81,147	46,230	36,101	11,047	8,072	5,782	465,314
35–39	156,192	124,293	83,093	47,573	38,032	11,999	7,964	4,941	474,087
40–44	137,205	110,095	73,124	42,825	35,019	10,864	7,369	4,170	420,671
45–49	115,982	94,509	61,746	35,698	30,326	9,101	6,706	3,490	357,558
50–54	95,632	78,785	50,876	27,795	25,564	7,582	5,848	2,491	294,573
55–59	64,864	53,943	33,397	17,857	17,313	5,123	3,485	1,444	197,426
60–64	48,312	41,339	23,470	13,451	13,827	3,822	2,243	719	147,183
65–69	34,003	30,654	16,317	9,346	10,135	2,849	1,388	401	105,093
70–74	14,487	11,283	7,955	3,583	6,517	788	491	147	45,251
75–79	5,487	4,233	3,228	1,230	n.a.	321	168	79	14,746
80+	2,113	1,946	1,423	542	n.a.	140	58	20	6,242
Not stated	3,720	27	408	0	24	4	15	21	4,219
<b>All ages</b>	<b>1,077,032</b>	<b>880,886</b>	<b>583,646</b>	<b>325,162</b>	<b>272,481</b>	<b>82,977</b>	<b>58,244</b>	<b>34,359</b>	<b>3,314,787</b>
Ages 20–69 years	1,051,225	863,397	570,632	319,807	265,940	81,724	57,512	34,092	3,244,329

(a) The WA and ACT registers only register women with a valid WA or ACT address respectively.

(b) South Australia has grouped women aged 70 years or more, and for the purpose of this table they appear in the 70–74 age group.

*Notes*

1. These numbers may be over-estimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas.
2. Queensland data for the 1999–2000 period refer to the 2-year period from March 1999 to February 2001.

Source: AIHW analysis of state and territory Cervical Cytology Registry data.

**Table 2b: Proportion of women participating in the National Cervical Screening Program, by age, states and territories, 1999–2000**

Age group	NSW	Vic	Qld	WA <sup>(a)</sup>	SA <sup>(b)</sup>	Tas	ACT <sup>(c)</sup>	NT	Australia
<b>(Per cent)</b>									
20–24	45.6	50.0	51.7	50.6	53.5	61.3	48.8	58.8	49.5
25–29	59.6	65.5	61.2	62.9	65.8	66.3	62.1	64.9	62.4
30–34	65.3	69.9	64.0	67.9	69.9	70.1	67.7	67.6	67.0
35–39	67.2	72.3	64.8	69.5	71.5	71.2	69.2	66.6	68.7
40–44	67.0	72.5	64.8	69.5	72.6	70.7	69.7	69.7	68.8
45–49	66.1	72.1	63.2	67.3	71.3	68.4	70.2	72.4	67.8
50–54	69.3	76.4	65.9	70.3	75.1	72.2	79.9	75.2	71.3
55–59	60.2	68.3	57.1	60.7	66.3	62.0	71.7	70.0	62.5
60–64	53.7	62.2	51.0	56.4	62.3	54.6	65.3	58.6	56.5
65–69	40.8	49.7	39.9	44.5	48.6	43.9	49.9	48.3	44.2
<b>All ages</b>									
Crude rate	55.2	60.4	55.4	58.5	59.5	58.9	61.4	65.3	57.5
AS rate	55.0	60.4	54.5	57.4	60.4	59.4	59.5	60.7	57.2
95% CI	54.9–55.1	60.3–60.6	54.4–54.7	57.2–57.6	60.2–60.6	59.0–59.8	58.9–60.0	60.0–61.4	57.1–57.2
<b>Ages 20–69 years</b>									
Crude rate	60.7	66.6	60.2	63.5	66.7	66.0	65.3	66.4	63.1
AS rate	60.2	66.2	59.5	62.8	66.2	65.5	65.1	65.6	62.6
95% CI	60.1–60.3	66.1–66.3	59.3–59.6	62.6–63.1	66.0–66.5	65.0–65.9	64.6–65.7	64.9–66.4	62.5–62.6

(a) The WA and ACT registers only register women with a valid WA and ACT address respectively.

(b) South Australia has grouped all women aged 70 years or more, and for the purposes of this table they appear in the 70–74 age group.

**Notes**

1. These numbers may be over-estimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas.
2. Queensland data for the 1999–2000 period refer to the 2-year period from March 1999 to February 2001.
3. Rates are standardised to the 1991 Australian total population.

Source: AIHW analysis of state and territory Cervical Cytology Registry data.



## Indicator 2: Early re-screening

**Table 3: Number of women with repeat screenings in the 21 months following a negative Pap smear in February 1999, states and territories, and Australia, 1999–2000**

No. of tests	NSW	Vic	Qld	WA <sup>(a)</sup>	SA	Tas	ACT <sup>(a)</sup>	NT	Australia
0	36,482	33,041	23,870	10,568	9,438	2,624	2,147	1,386	119,556
1	15,212	14,126	8,341	4,601	3,411	1,012	723	490	47,916
2	1,902	2,126	1,202	547	478	138	125	73	6,591
3	317	504	244	96	97	28	16	8	1,310
4	45	117	62	16	23	4	2	0	269
5 or more	6	55	10	3	5	1	0	1	81

(a) The WA and ACT registries only register women with a valid WA and ACT address respectively.

### Notes

- These numbers may be over-estimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate Registers and inclusion of women resident overseas.
- The follow-up period for Queensland data is from March 1999 to December 2000.

Source: State and territory Cervical Cytology Registry data.

**Table 4: Percentage of women with repeat screenings in the 21 months following a negative smear in February 1999, states and territories, and Australia, 1999–2000**

No. of tests	NSW	Vic	Qld	WA <sup>(a)</sup>	SA	Tas	ACT <sup>(a)</sup>	NT	Australia
0	67.5	66.1	70.8	66.8	70.2	68.9	71.3	70.8	68.0
1	28.3	28.3	24.7	29.1	25.4	26.6	24.0	25.0	27.3
2	3.5	4.3	3.6	3.5	3.6	3.6	4.1	3.7	3.8
3	0.6	1.0	0.7	0.6	0.7	0.7	0.5	0.4	0.7
4	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.0	0.2
5 or more	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0

(a) The WA and ACT registries only register women with a valid WA and ACT address respectively.

Note: These numbers may be over-estimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas.

Source: State and territory Cervical Cytology Registry data.

### Indicator 3: Low-grade abnormality detection

**Table 5a: Number of low- and high-grade abnormalities on histology for women aged 20–69 years, states and territories, 1999**

Abnormalities	NSW	Vic	WA	SA	Tas	ACT	NT	Total
Low-grade	6,207	4197	2563	1767	640	221	158	15,753
High-grade	4,523	3546	1509	1237	470	178	179	11,642
<b>Ratio</b>	<b>1.37</b>	<b>1.18</b>	<b>1.70</b>	<b>1.43</b>	<b>1.36</b>	<b>1.24</b>	<b>0.88</b>	<b>1.35</b>
<b>As a percentage of all screens in 1999</b>								
Low-grade	1.0	0.8	1.3	1.2	1.4	1.8	0.9	1.0
High-grade	0.8	0.7	0.8	0.8	1.0	1.4	1.0	0.8

*Notes*

1. The Queensland Health Pap Smear Register began operations in February 1999; therefore no data are available for 1999.
2. These numbers may be over-estimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas.

Source: State and territory Cervical Cytology Registry data.

**Table 5b: Number of low- and high-grade abnormalities on histology for women aged 20–69 years, states and territories, 2000**

Abnormalities	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Low-grade	6,381	3,701	5,016	2,075	1,541	678	273	320	19,985
High-grade	4,493	2,986	3,105	1,240	1,045	478	220	284	13,851
<b>Ratio</b>	<b>1.42</b>	<b>1.24</b>	<b>1.62</b>	<b>1.67</b>	<b>1.47</b>	<b>1.42</b>	<b>1.24</b>	<b>1.13</b>	<b>1.44</b>
<b>As a percentage of all screens in 2000</b>									
Low-grade	1.1	0.7	1.6	1.1	1.0	1.5	0.5	1.6	1.1
High-grade	0.7	0.6	1.0	0.6	0.7	1.0	0.4	1.4	0.7

*Note:* These numbers may be over-estimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas.

Source: State and territory Cervical Cytology Registry data.

## Indicator 4: High-grade abnormality detection

**Table 6a: Rate of histologically confirmed high-grade abnormalities per 1,000 women screened, by age, states and territories, 1999**

Age group	NSW	Vic	WA	SA <sup>(a)</sup>	Tas	ACT	NT	Total
20–24	18.3	15.9	15.5	16.8	23.1	8.5	13.4	16.8
25–29	14.8	14.1	17.4	15.4	21.0	10.1	15.8	15.0
30–34	9.9	9.2	10.6	11.8	12.1	10.1	11.1	10.0
35–39	6.7	6.2	6.7	7.0	8.4	8.3	9.6	6.7
40–44	4.3	3.8	4.4	6.5	5.8	5.5	4.0	4.4
45–49	3.0	2.7	3.1	5.0	4.6	4.4	4.8	3.2
50–54	2.2	1.4	1.5	2.9	3.0	1.5	3.9	2.0
55–59	1.4	1.5	1.6	2.6	1.4	3.1	7.9	1.7
60–64	1.3	1.7	1.6	1.8	1.9	3.4	0.0	1.6
65–69	2.2	1.3	2.3	2.4	1.3	6.8	9.3	2.0
70–74	1.7	2.4	0.9	6.8	4.4	10.9	12.8	2.9
75–79	4.5	1.5	5.7	n.a.	0.0	48.1	0.0	4.1
80–84	2.4	2.5	3.8	n.a.	20.4	0.0	0.0	3.0
85+	0.0	2.9	44.4	n.a.	0.0	0.0	0.0	4.4
<b>All ages</b>	<b>7.4</b>	<b>6.8</b>	<b>7.8</b>	<b>8.3</b>	<b>9.9</b>	<b>7.0</b>	<b>9.7</b>	<b>7.5</b>
Ages 20–69 years	7.6	6.9	7.9	8.4	10.0	6.8	9.7	7.5

(a) South Australia has grouped all women aged 70 years or more, and for the purpose of this table they appear in the 70–74 age group.

### Notes

1. These numbers may be over-estimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas.
2. No data were available for Queensland for this period.

Source: State and territory Cervical Cytology Registry data.

**Table 6b: Rate of histologically confirmed high-grade abnormalities per 1,000 women screened, by age, states and territories, 2000**

Age group	NSW	Vic	Qld	WA	SA <sup>(a)</sup>	Tas	ACT	NT	Australia
20–24	17.0	13.8	19.0	13.8	13.8	27.0	13.8	24.0	16.3
25–29	15.4	13.1	19.7	14.8	13.8	18.1	9.4	23.7	15.5
30–34	10.3	8.6	12.8	9.1	10.9	12.1	12.1	15.6	10.3
35–39	6.2	5.3	8.6	5.6	6.1	10.9	5.4	12.3	6.5
40–44	5.0	3.4	5.5	3.2	4.9	7.0	3.1	11.5	4.5
45–49	2.8	2.3	4.1	2.2	3.4	4.4	4.8	6.3	3.0
50–54	1.9	1.2	2.6	1.3	2.3	3.4	3.6	1.4	1.9
55–59	1.3	1.0	3.0	1.0	1.8	1.7	2.5	3.6	1.5
60–64	1.4	1.1	1.5	1.7	2.4	1.4	1.6	4.7	1.5
65–69	2.2	1.1	1.6	1.0	2.0	2.6	2.6	9.5	1.7
70–74	3.0	2.0	2.4	1.3	8.6	2.3	0.0	12.7	3.2
75–79	3.7	2.1	6.0	1.1	n.a.	0.0	50.0	0.0	3.8
80–84	4.8	2.5	9.5	0.0	n.a.	0.0	0.0	0.0	4.3
85+	6.5	0.0	0.0	8.4	n.a.	0.0	0.0	0.0	3.1
<b>All ages</b>	<b>7.3</b>	<b>5.9</b>	<b>9.5</b>	<b>6.3</b>	<b>7.0</b>	<b>10.2</b>	<b>6.9</b>	<b>14.3</b>	<b>7.3</b>
Ages 20–69 years	7.4	6.0	9.6	6.4	7.0	10.4	6.8	14.3	7.4

(a) South Australia has grouped all women aged 70 years or more, and for the purpose of this table they appear in the 70–74 age group.

*Note:* These numbers may be over-estimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas.

*Source:* State and territory Cervical Cytology Registry data.

**Table 7a: Number of histologically confirmed high-grade abnormalities, by age, states and territories, 1999**

Age group	NSW	Vic	WA	SA <sup>(a)</sup>	Tas	ACT	NT	Total
20–24	1,031	787	316	247	118	31	35	2,565
25–29	1,252	1,031	466	300	131	49	54	3,283
30–34	859	690	290	240	79	46	34	2,238
35–39	599	461	188	150	59	38	25	1,520
40–44	332	249	114	125	36	23	9	888
45–49	201	152	67	84	24	17	9	554
50–54	122	64	25	41	13	5	5	275
55–59	51	48	17	24	4	6	6	156
60–64	35	40	13	13	4	4	0	109
65–69	41	22	13	13	2	5	2	98
70–74	14	16	2	23	2	3	1	61
75–79	14	4	5	0	0	5	0	28
80–84	2	2	1	0	1	0	0	6
85+	0	1	2	0	0	0	0	3
Age not stated	5	0	0	0	0	0	0	5
<b>All ages</b>	<b>4,558</b>	<b>3,569</b>	<b>1,519</b>	<b>1,260</b>	<b>473</b>	<b>232</b>	<b>180</b>	<b>11,789</b>
Ages 20–69 years	4,523	3,546	1,509	1,237	470	224	179	11,686

(a) South Australia has grouped all women aged 70 years or more, and for the purpose of this table they appear in the 70–74 age group.

*Notes*

1. These numbers may be over-estimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas.
2. No data were available for Queensland for this period.

*Source:* State and territory Cervical Cytology Registry data.

**Table 7b: Number of histologically confirmed high-grade abnormalities, by age, states and territories, 2000**

Age group	NSW	Vic	Qld	WA	SA <sup>(a)</sup>	Tas	ACT	NT	Australia
20–24	924	632	665	266	196	131	46	62	2,922
25–29	1,284	880	904	379	260	105	42	83	3,937
30–34	898	619	593	249	224	75	56	53	2,767
35–39	559	373	400	158	131	73	24	36	1,754
40–44	399	217	231	84	97	44	13	28	1,113
45–49	192	128	146	50	58	23	18	13	628
50–54	107	58	75	23	33	15	12	2	325
55–59	49	31	57	11	17	5	5	3	178
60–64	40	28	20	14	18	3	2	2	127
65–69	41	20	14	6	11	4	2	2	100
70–74	24	13	10	3	31	1	0	1	83
75–79	11	5	10	1	0	0	4	0	31
80–84	4	2	5	0	0	0	0	0	11
85+	2	0	0	1	0	0	0	0	3
Age not stated	2	0	1	0	0	0	0	0	3
<b>All ages</b>	<b>4,536</b>	<b>3,006</b>	<b>3,131</b>	<b>1,245</b>	<b>1,076</b>	<b>479</b>	<b>224</b>	<b>285</b>	<b>13,982</b>
Ages 20–69 years	4,493	2,986	3,105	1,240	1,045	478	220	284	13,851

(a) South Australia has grouped all women aged 70 years or more, and for the purpose of this table they appear in the 70–74 age group

*Note:* These numbers may be over-estimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas.

*Source:* State and territory Cervical Cytology Registry data.

**Table 8a: Number of women screened, by age, states and territories, 1999**

Age group	NSW	Vic	WA	SA <sup>(a)</sup>	Tas	ACT	NT	Total
20–24	56,207	49,642	20,430	14,682	5,112	3,647	2,617	152,337
25–29	84,768	72,923	26,751	19,534	6,247	4,856	3,420	218,499
30–34	87,185	74,662	27,357	20,319	6,536	4,573	3,068	223,700
35–39	89,864	74,680	28,256	21,299	7,065	4,557	2,616	228,337
40–44	77,916	65,350	25,624	19,272	6,199	4,184	2,225	200,770
45–49	66,105	56,250	21,453	16,760	5,225	3,875	1,860	171,528
50–54	54,472	46,336	16,802	13,938	4,302	3,299	1,289	140,438
55–59	36,266	31,374	10,801	9,400	2,854	1,922	757	93,374
60–64	27,057	23,708	8,133	7,351	2,113	1,164	361	69,887
65–69	18,896	17,423	5,611	5,476	1,582	738	215	49,941
70–74	8,061	6,696	2,276	3,361	451	276	78	21,199
75–79	3,103	2,600	872	n.a.	173	104	46	6,898
80–84	832	811	260	n.a.	49	19	7	1,978
85+	263	344	45	n.a.	21	10	2	685
Age not stated	2,406	0	0	11	5	8	11	2,441
<b>All ages</b>	<b>613,401</b>	<b>522,799</b>	<b>194,671</b>	<b>151,403</b>	<b>47,934</b>	<b>33,232</b>	<b>18,572</b>	<b>1,582,012</b>
Ages 20–69 years	598,736	512,348	191,218	148,031	47,235	32,815	18,428	1,548,811

(a) South Australia has grouped all women aged 70 years or more, and for the purpose of this table they appear in the 70–74 age group.

*Notes*

1. These numbers may be over-estimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas.
2. No data were available for Queensland for this period.

*Source:* State and territory Cervical Cytology Registry data.

**Table 8b: Number of women screened, by age, states and territories, 2000**

Age group	NSW	Vic	Qld	WA	SA <sup>(a)</sup>	Tas	ACT	NT	Australia
20–24	54,311	45,637	35,011	19,340	14,251	4,849	3,332	2,581	179,312
25–29	83,176	67,289	45,787	25,623	18,861	5,813	4,489	3,496	254,534
30–34	87,608	71,913	46,487	27,275	20,521	6,217	4,611	3,399	268,031
35–39	89,792	70,492	46,677	28,213	21,478	6,679	4,474	2,935	270,740
40–44	79,978	64,332	42,141	26,282	19,986	6,288	4,180	2,440	245,627
45–49	67,717	55,487	35,455	22,617	17,160	5,216	3,779	2,056	209,487
50–54	56,503	47,826	29,398	17,830	14,521	4,348	3,316	1,445	175,187
55–59	38,304	32,441	19,203	11,521	9,678	2,972	2,001	823	116,943
60–64	27,659	24,586	13,156	8,448	7,654	2,165	1,290	425	85,383
65–69	19,011	17,734	8,744	5,856	5,372	1,546	774	211	59,248
70–74	8,019	6,600	4,195	2,358	3,594	435	268	79	25,548
75–79	2,964	2,391	1,659	905	0	168	80	37	8,204
80–84	842	798	529	300	0	39	19	8	2,535
85+	306	321	187	119	0	29	5	3	970
Age not stated	1,734	0	207	0	11	0	7	16	1,975
<b>All ages</b>	<b>617,924</b>	<b>507,847</b>	<b>328,836</b>	<b>196,687</b>	<b>153,087</b>	<b>46,764</b>	<b>32,625</b>	<b>19,954</b>	<b>1,903,724</b>
Ages 20–69 years	604,059	497,737	322,059	193,005	149,482	46,093	32,246	19,811	1,864,492

(a) South Australia has grouped all women aged 70 years or more, and for the purpose of this table they appear in the 70–74 age group.

*Note:* These numbers may be over-estimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas.

*Source:* State and territory Cervical Cytology Registry data.



**Table 9a: Age-standardised high-grade abnormality rate on histology per 1,000 women screened aged 20–69 years, states and territories, 1999**

	NSW	Vic	WA	SA	Tas	ACT	NT	Total
<b>All ages</b>								
AS rate	7.1	6.4	7.8	7.9	9.5	6.5	8.4	7.1
95% CI	6.9–7.3	6.2–6.7	7.0–8.8	7.4–8.3	8.4–10.7	5.5–7.5	6.8–10.2	7.0–7.3
<b>Target age 20–69</b>								
AS rate	7.7	6.9	7.7	8.5	9.9	6.8	8.7	7.6
95% CI	7.4–7.9	6.7–7.2	7.4–8.2	8.0–9.0	9.0–10.9	5.8–7.7	7.4–10.2	7.4–7.7

*Notes*

1. No data were available for Queensland for this period.
2. Standardised to the 1991 Australian total population.
3. These numbers may be over-estimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas.

Source: AIHW analysis of state and territory Cervical Cytology Registry data.

**Table 9b: Age-standardised high-grade abnormality rate on histology per 1,000 women screened aged 20–69 years, states and territories, 2000**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
<b>All ages</b>									
AS rate	7.1	5.7	8.8	5.8	6.8	9.6	7.6	12.1	7.1
95% CI	6.9–7.4	5.5–6.0	8.5–9.2	5.5–6.1	6.4–7.2	8.7–10.5	6.0–9.7	10.4–14.0	7.0–7.2
<b>Target age 20–69</b>									
AS rate	7.6	6.2	9.4	6.5	7.2	10.6	6.8	12.9	7.5
95% CI	7.4–7.8	5.9–6.4	9.0–9.7	6.1–6.9	6.8–7.7	9.7–11.5	5.8–7.6	11.2–14.7	7.4–7.6

*Notes*

1. Rates are standardised to the 1991 Australian total population.
2. These numbers may be over-estimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas.

Source: AIHW analysis of state and territory Cervical Cytology Registry data.

## Indicator 5: Incidence of micro-invasive cervical cancer

Table 10: New cases of micro-invasive cervical cancer, by age, Australia, 1988–1999

Age group	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
0–4	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
10–14	0	0	0	0	0	0	0	0	0	0	0	0
15–19	0	0	0	1	0	0	0	0	1	0	0	0
20–24	4	1	4	0	5	1	7	1	6	3	2	2
25–29	13	13	14	14	14	9	17	16	17	10	17	14
30–34	20	28	32	31	32	32	36	42	18	27	18	14
35–39	13	10	24	40	25	26	29	29	35	21	26	20
40–44	12	17	25	30	24	17	24	30	23	21	22	15
45–49	9	6	18	9	13	14	26	23	12	11	15	7
50–54	6	4	5	11	12	17	9	12	11	8	13	7
55–59	5	5	8	7	11	4	5	9	7	8	3	8
60–64	2	7	8	7	8	7	10	11	6	5	5	2
65–69	2	2	6	7	9	10	6	7	10	2	2	3
70–74	0	0	2	4	2	3	6	5	3	4	3	2
75–79	1	1	3	3	2	1	3	5	2	2	2	1
80–84	0	1	0	2	0	0	0	1	1	0	2	0
85+	0	0	0	0	0	1	2	1	1	0	0	0
<b>All ages</b>	<b>87</b>	<b>95</b>	<b>149</b>	<b>166</b>	<b>157</b>	<b>142</b>	<b>180</b>	<b>192</b>	<b>153</b>	<b>122</b>	<b>130</b>	<b>95</b>
Ages 20–69 years	86	93	144	156	153	137	169	180	145	116	123	92

Source: National Cancer Statistics Clearing House (AIHW).

**Table 11: Age-specific and age-standardised rates of micro-invasive cervical cancer, by age, Australia, 1988–1999**

Age group	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
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
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
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
15–19	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
20–24	0.6	0.2	0.6	0.0	0.7	0.1	1.0	0.1	0.9	0.4	0.3	0.3
25–29	1.9	1.8	2.0	2.0	2.0	1.3	2.5	2.3	2.4	1.4	2.3	1.9
30–34	3.0	4.1	4.6	4.4	4.4	4.4	4.9	5.7	2.5	3.8	2.5	2.0
35–39	2.0	1.5	3.7	6.0	3.7	3.8	4.2	4.1	4.8	2.8	3.4	2.6
40–44	2.1	2.9	4.0	4.7	3.7	2.6	3.7	4.5	3.4	3.0	3.1	2.1
45–49	2.1	1.3	3.8	1.8	2.4	2.4	4.4	3.7	1.9	1.7	2.3	1.0
50–54	1.6	1.0	1.2	2.7	2.8	3.9	2.0	2.5	2.2	1.5	2.3	1.2
55–59	1.4	1.4	2.2	2.0	3.0	1.1	1.3	2.3	1.7	1.9	0.7	1.8
60–64	0.5	1.9	2.2	1.9	2.2	1.9	2.8	3.1	1.7	1.4	1.3	0.5
65–69	0.6	0.6	1.7	2.0	2.5	2.8	1.7	2.0	2.8	0.6	0.6	0.9
70–74	0.0	0.0	0.7	1.4	0.7	1.0	1.9	1.5	0.9	1.2	0.9	0.6
75–79	0.5	0.5	1.4	1.3	0.9	0.4	1.3	2.1	0.8	0.8	0.7	0.4
80–84	0.0	0.7	0.0	1.4	0.0	0.0	0.0	0.6	0.6	0.0	1.1	0.0
85+	0.0	0.0	0.0	0.0	0.0	0.8	1.6	0.7	0.7	0.0	0.0	0.0
<b>All ages</b>												
Crude rate	1.5	1.6	2.5	2.7	2.5	2.2	2.8	2.9	2.3	1.8	1.9	1.4
AS rate (A)	1.5	1.6	2.5	2.7	2.5	2.3	2.8	3.0	2.3	1.8	1.9	1.4
95% CI	1.2–1.9	1.2–1.9	2.1–2.9	2.3–3.1	2.1–2.9	1.9–2.6	2.4–3.2	2.5–3.3	1.9–2.7	1.5–2.1	1.5–2.1	1.1–1.7
AS rate (W)	1.6	1.6	2.5	2.6	2.5	2.2	2.8	2.9	2.3	1.8	1.9	1.4
95% CI	1.2–1.9	1.2–1.8	2–2.9	2.2–3	2.1–2.9	1.8–2.5	2.4–3.2	2.4–3.2	1.9–2.6	1.4–2.1	1.5–2.1	1.1–1.7
<b>Age 20–69 years</b>												
Crude rate	1.7	1.8	2.7	2.9	2.8	2.5	3.0	3.2	2.5	2.0	2.1	1.5
AS rate (A)	1.7	1.8	2.7	2.9	2.8	2.5	3.0	3.1	2.5	2.0	2.0	1.5
95% CI	1.3–2.1	1.4–2.2	2.3–3.2	2.4–3.3	2.3–3.2	2.0–2.9	2.5–3.4	2.7–3.6	2.1–2.9	1.6–2.3	1.7–2.4	1.2–1.8
AS rate (W)	1.7	1.7	2.6	2.7	2.7	2.3	2.9	3.0	2.4	1.9	2.0	1.5
95% CI	1.3–2.0	1.4–2.0	2.2–3.0	2.3–3.1	2.3–3.1	1.9–2.7	2.5–3.3	2.6–3.4	2.0–2.8	1.5–2.2	1.6–2.3	1.2–1.8

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

*Source:* National Cancer Statistics Clearing House (AIHW).

## Indicator 6: Incidence of invasive squamous, adenocarcinoma, adeno-squamous and other cervical cancer

Table 12: New cases of cervical cancer, by age, Australia, 1988–1999

Age group	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
0–4	1	0	0	0	0	0	0	0	0	0	0	0
5–9	0	0	0	0	0	0	1	0	0	0	0	0
10–14	0	0	0	0	0	0	0	0	0	0	0	0
15–19	4	1	1	1	0	1	1	2	1	1	2	0
20–24	19	16	12	12	9	9	16	3	15	10	10	7
25–29	77	67	59	47	53	37	50	51	43	43	48	55
30–34	128	131	112	119	106	105	123	112	68	78	85	74
35–39	137	122	155	140	126	129	130	110	141	99	102	100
40–44	124	127	139	150	130	128	131	118	116	102	101	104
45–49	92	93	121	105	100	101	131	99	102	79	109	76
50–54	63	82	68	90	77	89	88	58	80	75	65	65
55–59	67	83	80	63	78	78	73	69	63	51	53	48
60–64	90	86	78	81	76	76	88	71	61	51	55	63
65–69	102	99	75	89	87	91	94	77	65	56	56	54
70–74	54	66	66	78	72	64	77	73	59	45	61	44
75–79	50	51	51	48	53	46	65	50	51	46	45	41
80–84	35	28	29	36	35	37	40	30	41	32	39	35
85+	23	19	23	33	22	21	24	34	25	28	29	21
<b>All ages</b>	<b>1,066</b>	<b>1,071</b>	<b>1,069</b>	<b>1,092</b>	<b>1,024</b>	<b>1,012</b>	<b>1,132</b>	<b>957</b>	<b>931</b>	<b>796</b>	<b>860</b>	<b>787</b>
Ages 20–69 years	899	906	899	896	842	843	924	768	754	644	684	646

Note: The above table includes the incidence of micro-invasive and invasive cervical cancers.

Source: National Cancer Statistics Clearing House (AIHW).

**Table 13: Age-specific and age-standardised incidence rates of cervical cancer, by age, Australia, 1988–1999**

Age group	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
0–4	0.2	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	0.2	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
15–19	0.6	0.1	0.1	0.2	0.0	0.2	0.2	0.3	0.2	0.2	0.3	0.0
20–24	2.9	2.4	1.8	1.7	1.3	1.3	2.3	0.4	2.2	1.5	1.5	1.1
25–29	11.1	9.5	8.3	6.7	7.7	5.4	7.4	7.4	6.1	5.9	6.5	7.5
30–34	19.4	19.3	16.1	16.7	14.6	14.4	16.7	15.3	9.4	10.9	11.9	10.3
35–39	21.6	18.9	23.6	21.1	18.6	18.7	18.6	15.4	19.3	13.3	13.5	13.1
40–44	21.8	21.3	22.5	23.5	20.3	19.8	19.9	17.7	17.1	14.7	14.3	14.5
45–49	21.1	20.4	25.3	20.9	18.6	17.6	22.0	16.1	15.9	12.3	16.6	11.4
50–54	16.7	21.1	17.0	21.8	18.2	20.5	19.4	12.2	16.1	13.9	11.3	10.8
55–59	18.4	23.0	22.3	17.6	21.3	20.8	18.9	17.4	15.5	12.1	12.2	10.5
60–64	24.3	23.2	21.0	21.9	20.8	21.1	24.7	19.9	17.1	14.0	14.7	16.3
65–69	31.0	28.9	21.5	25.3	24.6	25.6	26.5	21.7	18.3	15.9	16.0	15.6
70–74	20.2	24.8	24.4	27.6	24.6	21.1	24.3	22.6	18.0	13.7	18.4	13.2
75–79	24.3	23.7	23.1	21.3	23.1	20.0	28.5	21.4	20.9	17.9	16.7	14.6
80–84	27.1	20.9	20.8	24.8	23.1	23.4	23.9	17.4	23.2	17.8	21.4	19.0
85+	23.0	18.4	21.8	30.0	19.0	17.2	18.8	25.3	17.7	18.8	18.6	12.7
<b>All ages</b>												
Crude rate	12.9	12.7	12.5	12.6	11.7	11.4	12.6	10.5	10.1	8.5	9.1	8.2
AS Rate (A)	12.9	12.6	12.4	12.3	11.3	11.0	12.1	10.0	9.5	8.0	8.4	7.7
AS Rate (W)	10.6	10.5	10.2	10.1	9.3	9.1	9.9	8.2	7.8	6.5	6.9	6.3
<b>Ages 20–69 years</b>												
Crude rate	17.7	17.4	16.9	16.6	15.3	15.2	16.4	13.5	13.0	11.0	11.5	10.7
AS Rate (A)	17.7	17.4	17.0	16.6	15.3	15.1	16.3	13.4	12.8	10.8	11.2	10.5
AS Rate (W)	17.2	17.0	16.6	16.1	14.9	14.7	15.9	13.0	12.5	10.5	11.0	10.2

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

*Source:* National Cancer Statistics Clearing House (AIHW).

**Table 14a: Number of new cases of cervical cancer by age, states and territories, 1995–1998**

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	0	0	0	0	0	0	0	0
10–14	0	0	0	0	0	0	0	0	0
15–19	3	1	2	0	0	0	0	0	6
20–24	11	6	14	3	0	4	0	0	38
25–29	56	41	42	15	16	8	4	3	185
30–34	120	78	75	30	23	15	1	1	343
35–39	155	99	100	38	20	20	9	11	452
40–44	137	117	77	58	24	8	10	6	437
45–49	145	95	65	41	22	9	4	8	389
50–54	117	61	54	20	11	5	5	5	278
55–59	81	61	45	24	13	6	4	2	236
60–64	82	65	38	24	15	10	2	2	238
65–69	85	63	53	26	16	7	1	3	254
70–74	91	54	38	23	21	5	4	2	238
75–79	66	54	39	12	13	6	0	2	192
80–84	47	49	17	14	11	1	3	0	142
85+	34	36	24	15	6	0	1	0	116
<b>All ages</b>	<b>1,230</b>	<b>880</b>	<b>683</b>	<b>343</b>	<b>211</b>	<b>104</b>	<b>48</b>	<b>45</b>	<b>3,544</b>
Ages 20–69 years	989	686	563	279	160	92	40	41	2,850

Source: National Cancer Statistics Clearing House (AIHW).

**Table 14b: Age-specific rates of cervical cancer, by age, states and territories, 1995–1998**

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	0.0	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
15–19	0.4	0.2	0.4	0.0	0.0	0.0	0.0	0.0	0.2
20–24	1.2	0.9	2.7	1.1	0.0	6.3	0.0	0.0	1.4
25–29	5.8	5.6	8.0	5.4	7.5	12.1	7.6	8.1	6.5
30–34	12.3	10.7	14.4	10.7	10.3	21.3	2.0	3.0	11.9
35–39	15.6	13.5	18.8	13.1	8.5	26.3	17.3	35.5	15.4
40–44	14.9	17.1	15.5	21.0	10.9	11.3	19.8	22.2	15.9
45–49	17.0	14.9	13.9	16.4	10.5	13.8	8.2	35.4	15.2
50–54	16.5	11.7	14.1	10.3	6.4	9.3	13.9	31.3	13.3
55–59	14.1	14.5	15.3	15.6	9.3	13.5	16.4	20.3	14.2
60–64	16.1	17.3	15.4	18.5	11.9	25.4	11.0	31.3	16.4
65–69	16.9	17.3	22.3	21.7	12.6	18.5	6.4	67.8	18.0
70–74	19.4	15.8	17.5	21.8	17.0	14.1	27.8	65.9	18.2
75–79	18.3	20.9	23.2	15.0	13.5	21.3	0.0	101.0	19.1
80–84	18.5	26.4	14.5	23.8	16.1	4.9	45.4	0.0	20.0
85+	16.7	23.1	25.5	30.3	10.6	0.0	20.9	0.0	20.0
<b>All ages</b>									
Crude rate	9.8	9.5	10.2	9.7	7.1	10.8	7.7	12.9	9.6
AS rate (A)	9.1	8.7	9.8	9.3	6.4	10.7	7.8	17.9	9.0
95% CI	8.6–9.6	8.1–9.3	9.1–10.6	8.3–10.3	5.5–7.2	8.6–12.8	5.6–10.0	12.7–23.2	8.7–9.3
AS rate (W)	7.5	7.1	8.0	7.6	5.2	8.9	6.3	14.4	7.3
95% CI	7.1–7.9	6.6–7.5	7.4–8.6	6.8–8.4	4.5–5.9	7.2–10.6	4.5–8.1	10.2–18.6	7.1–7.6
<b>Ages 20–69 years</b>									
Crude rate	12.5	11.7	13.4	12.5	8.5	15.6	9.9	18.6	12.2
AS rate (A)	12.2	11.5	13.3	12.4	8.4	15.5	9.8	21.9	12.0
95% CI	11.4–13.0	10.6–12.4	12.2–14.4	10.8–13.9	7.1–9.6	12.2–18.9	6.6–13.0	15.2–28.6	11.6–12.5
AS rate (W)	12.0	11.2	12.9	12.0	8.1	15.0	9.7	21.6	11.7
95% CI	11.2–12.7	10.3–12.1	11.9–14.0	10.5–13.5	6.9–9.3	11.8–18.2	6.5–12.8	15.0–28.2	11.3–12.2

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

*Source:* National Cancer Statistics Clearing House (AIHW).

**Table 15a: Number of new cases of cervical cancer, by age, states and territories, 1996–1999**

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	0	0	0	0	0	0	0	0
10–14	0	0	0	0	0	0	0	0	0
15–19	2	1	1	0	0	0	0	0	4
20–24	11	8	15	3	0	5	0	0	42
25–29	61	37	47	13	16	7	5	3	189
30–34	105	58	72	30	26	12	0	2	305
35–39	147	93	102	33	24	24	9	10	442
40–44	130	107	91	52	24	8	5	6	423
45–49	134	90	64	34	25	6	5	8	366
50–54	122	60	54	21	14	5	3	6	285
55–59	64	62	41	19	16	5	4	4	215
60–64	80	60	45	17	18	7	1	2	230
65–69	89	50	50	22	12	4	4	0	231
70–74	83	55	27	22	13	4	3	2	209
75–79	65	45	37	14	14	5	1	2	183
80–84	53	46	21	15	8	2	2	0	147
85+	35	29	20	13	5	0	1	0	103
<b>All ages</b>	<b>1,181</b>	<b>801</b>	<b>687</b>	<b>308</b>	<b>215</b>	<b>94</b>	<b>43</b>	<b>45</b>	<b>3,374</b>
Ages 20–69 years	943	625	581	244	175	83	36	41	2,728

Source: National Cancer Statistics Clearing House (AIHW).



**Table 15b: Age-specific rates of cervical cancer, by age, states and territories, 1996–1999**

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	0.0	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
15–19	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.2
20–24	1.3	1.2	3.0	1.1	0.0	8.2	0.0	0.0	1.6
25–29	6.2	5.0	8.8	4.6	7.5	10.6	9.3	7.9	6.5
30–34	10.8	8.0	13.9	10.7	11.8	17.6	0.0	5.9	10.6
35–39	14.5	12.5	18.7	11.2	10.2	31.5	17.2	31.5	14.8
40–44	13.9	15.4	17.9	18.5	10.8	11.2	9.9	21.6	15.1
45–49	15.4	13.9	13.4	13.2	11.7	9.1	10.1	34.0	14.0
50–54	16.3	10.9	13.3	10.2	7.6	8.8	7.7	34.8	12.9
55–59	10.8	14.3	13.2	11.9	11.2	10.9	15.5	37.4	12.5
60–64	15.4	15.7	17.7	12.7	14.2	17.6	5.3	29.6	15.5
65–69	17.9	13.8	21.0	18.2	9.6	10.6	25.3	0.0	16.5
70–74	17.6	16.0	12.3	20.5	10.5	11.3	20.5	62.7	15.8
75–79	17.3	16.6	21.0	16.6	13.9	17.1	9.1	95.1	17.4
80–84	20.5	24.6	17.5	25.3	11.6	9.7	28.7	0.0	20.3
85+	16.3	17.8	20.1	24.9	8.4	0.0	19.4	0.0	16.8
<b>All ages</b>									
Crude rate	9.3	8.5	10.0	8.5	7.2	9.8	6.9	12.6	9.0
AS rate (A)	8.5	7.8	9.7	8.2	6.5	9.7	7.0	15.7	8.4
95% CI	8.0–9.0	7.2–8.3	9.0–10.4	7.3–9.1	5.7–7.4	7.7–11.6	4.9–9.1	11.1–20.3	8.1–8.7
AS rate (W)	7.0	6.4	8.0	6.5	5.4	8.0	5.7	12.8	6.9
95% CI	6.6–7.4	5.9–6.8	7.4–8.6	5.8–7.3	4.7–6.1	6.4–9.6	4.0–7.4	9.1–16.6	6.6–7.1
<b>Ages 20–69 years</b>									
Crude rate	11.8	8.5	10.9	8.7	7.5	11.3	7.1	14.7	977.9
AS rate (A)	11.4	10.3	13.5	10.6	9.1	14.1	9.0	18.7	11.3
95% CI	10.7–12.2	9.5–11.1	12.4–14.5	9.2–11.9	7.7–10.4	11.0–17.1	6.1–12.0	13.0–24.4	10.9–11.7
AS rate (W)	11.2	10.1	13.0	10.2	8.9	13.5	8.8	19.0	11.0
95% CI	10.5–11.9	9.3–10.9	12.0–14.1	8.9–11.5	7.5–10.2	10.6–16.4	6.0–11.7	13.2–24.8	10.6–11.5

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

*Source:* National Cancer Statistics Clearing House (AIHW).

**Table 16a: Number of new cases of cervical cancer, by histological type for women aged 20–69 years, Australia, 1988–1999**

Histological type	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Squamous	657	688	639	650	610	596	630	546	527	450	484	464
Adenocarcinoma	157	116	149	146	141	141	192	147	148	129	140	126
Adeno-squamous	40	48	50	41	51	47	40	34	40	32	30	23
Other	45	54	61	59	40	59	62	41	39	33	30	33
<b>Total</b>	<b>899</b>	<b>906</b>	<b>899</b>	<b>896</b>	<b>842</b>	<b>843</b>	<b>924</b>	<b>768</b>	<b>754</b>	<b>644</b>	<b>684</b>	<b>646</b>
<i>Micro-invasive</i>	<i>86</i>	<i>87</i>	<i>140</i>	<i>154</i>	<i>151</i>	<i>134</i>	<i>169</i>	<i>176</i>	<i>145</i>	<i>115</i>	<i>116</i>	<i>92</i>

Source: National Cancer Statistics Clearing House (AIHW).

**Table 16b: Age-standardised incidence rates for cervical cancer, by histological type for women aged 20–69 years, Australia, 1988–1999**

Histological type	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Squamous	12.9	13.2	12.1	12.0	11.1	10.7	11.1	9.5	9.0	7.5	8.0	7.5
Adenocarcinoma	3.1	0.0	2.8	2.7	2.6	2.5	3.4	2.6	2.5	2.1	2.3	2.0
Adeno-squamous	0.8	0.9	0.9	0.8	0.9	0.8	0.7	0.6	0.7	0.5	0.5	0.4
Other	0.9	1.0	1.1	1.1	0.7	1.1	1.1	0.7	0.7	0.6	0.5	0.5
<i>Micro-invasive</i>	<i>1.1</i>	<i>1.1</i>	<i>1.7</i>	<i>1.8</i>	<i>1.8</i>	<i>1.5</i>	<i>1.9</i>	<i>2.0</i>	<i>1.6</i>	<i>1.2</i>	<i>1.3</i>	<i>1.0</i>

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

Source: National Cancer Statistics Clearing House (AIHW).

**Table 17a: Number of new cases of cervical cancer, by histological type for women, all ages, Australia, 1988–1999**

Histological type	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Squamous	777	808	767	793	751	705	780	677	665	548	610	571
Adenocarcinoma	179	136	172	174	157	163	222	173	168	159	165	147
Adeno-squamous	45	53	56	48	56	56	50	39	47	38	35	25
Other	65	74	74	77	60	88	80	68	51	51	50	44
<b>Total</b>	<b>1,066</b>	<b>1,071</b>	<b>1,069</b>	<b>1,092</b>	<b>1,024</b>	<b>1,012</b>	<b>1,132</b>	<b>957</b>	<b>931</b>	<b>796</b>	<b>860</b>	<b>787</b>
<i>Micro-invasive</i>	<i>87</i>	<i>89</i>	<i>145</i>	<i>164</i>	<i>155</i>	<i>139</i>	<i>180</i>	<i>188</i>	<i>153</i>	<i>121</i>	<i>123</i>	<i>95</i>

Source: National Cancer Statistics Clearing House (AIHW).

**Table 17b: Age-standardised incidence rates for cervical cancer, by histological type for women, all ages, Australia, 1988–1999**

Histological type	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Squamous	9.4	9.6	8.9	8.9	8.3	7.7	8.3	7.1	6.8	5.5	6.0	5.6
Adenocarcinoma	2.2	0.0	2.0	2.0	1.8	1.8	2.4	1.8	1.7	1.6	1.7	1.4
Adeno-squamous	0.6	0.6	0.7	0.5	0.6	0.6	0.5	0.4	0.5	0.4	0.3	0.2
Other	0.8	0.9	0.8	0.8	0.6	0.9	0.9	0.7	0.5	0.5	0.5	0.4
<i>Micro-invasive</i>	<i>1.1</i>	<i>1.2</i>	<i>1.8</i>	<i>1.9</i>	<i>1.8</i>	<i>1.6</i>	<i>2.0</i>	<i>2.1</i>	<i>1.6</i>	<i>1.3</i>	<i>1.3</i>	<i>1.0</i>

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

Source: National Cancer Statistics Clearing House (AIHW).

## Indicator 8: Incidence by location

Table 18: Number of new cases of cervical cancer, by age and location, 1995–1998 and 1996–1999

Age group	Metropolitan		Rural		Remote	
	1995–1998	1996–1999	1995–1998	1996–1999	1995–1998	1996–1999
0–4	0	0	0	0	0	0
5–9	0	0	0	0	0	0
10–14	0	0	0	0	0	0
15–19	4	2	2	2	0	0
20–24	24	29	14	13	0	0
25–29	136	142	43	40	6	7
30–34	234	209	98	89	11	8
35–39	321	303	110	116	21	23
40–44	329	305	96	101	12	17
45–49	300	277	80	78	8	11
50–54	205	213	67	64	7	8
55–59	167	151	62	59	7	5
60–64	165	158	68	67	5	5
65–69	183	173	59	51	12	7
70–74	182	156	51	48	5	5
75–79	138	133	51	48	3	2
80–84	101	105	38	39	3	3
85+	89	78	24	23	3	2
<b>All ages</b>	<b>2,577</b>	<b>2,432</b>	<b>863</b>	<b>840</b>	<b>104</b>	<b>102</b>
Ages 20–69 years	2,063	1,959	697	679	90	90

*Note:* The numbers are presented as 4-year rolling blocks of data.

*Source:* National Cancer Statistics Clearing House (AIHW).

**Table 19: Age-specific and age-standardised incidence rates for cervical cancer, by age and location, 1995–1998 and 1996–1999**

Age group	Metropolitan		Rural		Remote	
	1995–1998	1996–1999	1995–1998	1996–1999	1995–1998	1996–1999
0–4	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
10–14	0.0	0.0	0.0	0.0	0.0	0.0
15–19	0.2	0.1	0.3	0.3	0.1	0.1
20–24	1.1	1.4	2.6	2.5	0.0	0.0
25–29	6.3	6.5	7.1	6.6	6.5	7.2
30–34	11.1	10.0	14.4	13.3	11.6	8.5
35–39	15.3	14.3	14.6	15.3	24.2	25.5
40–44	16.7	15.2	13.7	14.2	16.6	23.2
45–49	16.2	14.7	12.7	12.1	13.3	16.8
50–54	13.7	13.4	12.5	11.5	13.2	15.2
55–59	14.4	12.6	13.6	12.4	19.5	13.0
60–64	16.4	15.5	16.5	16.0	16.9	16.6
65–69	18.6	17.7	14.6	12.8	51.8	29.9
70–74	19.6	16.7	14.1	13.3	30.5	27.2
75–79	19.2	17.6	18.8	17.0	24.0	15.6
80–84	19.9	20.5	19.9	20.2	33.2	31.7
85+	21.3	17.7	15.5	14.1	35.9	23.1
<b>All ages</b>						
AS rate (A)	9.1	8.4	8.6	8.3	11.8	10.9
95% CI	8.7–9.5	8.1–8.7	8.0–9.2	7.7–8.9	9.5–14.1	8.8–13.0
AS rate (W)	7.4	6.9	7	6.8	9.3	8.8
95% CI	7.1–7.7	6.6–7.2	6.5–7.5	6.3–7.3	7.5–11.1	7.1–10.5
<b>Ages 20–69 years</b>						
AS rate (A)	12.1	11.3	11.7	11.3	15.2	14.5
95% CI	11.6–12.6	10.8–11.8	10.8–12.6	10.5–12.1	12.1–18.3	11.5–17.5
AS rate (W)	11.8	11.1	11.4	10.9	14.5	14.0
95% CI	11.3–12.3	10.6–11.6	10.6–12.2	10.1–11.7	11.5–17.5	11.1–16.9

*Notes*

1. The numbers are presented as 4-year rolling blocks of data.
2. Rates are expressed per 100,000 women and age-standardised to the Australian 1991 population (A) and the World Standard Population (W).

Source: National Cancer Statistics Clearing House (AIHW).

## Indicator 7: Mortality

Table 20: Number of deaths from cervical cancer, by age, Australia, 1981–2000

Age group	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00
0–4	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
10–14	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	1	1	0	0	0	0	1	0	0	0	0	0
20–24	0	1	1	0	0	2	2	0	1	1	3	0	0	0	0	1	0	3	1	1
25–29	4	7	8	10	6	6	5	3	3	10	5	5	2	6	3	1	2	6	2	4
30–34	12	13	12	13	20	12	15	12	21	14	13	15	11	11	7	13	8	5	6	10
35–39	14	12	18	19	17	16	20	15	18	30	25	19	25	11	16	23	18	19	7	12
40–44	17	22	20	20	18	26	20	24	24	36	19	27	32	28	21	20	16	19	18	14
45–49	18	24	28	26	21	24	19	27	31	36	29	26	23	35	32	30	28	16	25	27
50–54	30	29	26	25	25	25	24	19	27	17	21	13	29	37	26	13	21	24	15	19
55–59	36	41	40	21	31	41	32	41	20	25	25	23	20	26	34	22	24	15	14	19
60–64	46	47	36	41	41	41	28	41	33	34	33	31	25	24	30	21	22	28	15	24
65–69	52	39	49	43	52	50	46	41	54	43	35	25	30	37	37	29	30	19	21	26
70–74	42	35	30	33	43	32	55	34	48	25	37	45	38	33	43	41	36	28	30	37
75–79	40	34	20	29	29	23	29	35	29	32	30	32	28	30	30	38	32	26	26	25
80–84	25	21	22	26	26	23	20	34	24	8	22	35	24	26	27	22	27	26	19	23
85+	19	18	21	21	29	24	16	17	22	25	32	23	24	24	20	24	30	31	21	26
<b>All ages</b>	<b>354</b>	<b>342</b>	<b>330</b>	<b>327</b>	<b>359</b>	<b>343</b>	<b>329</b>	<b>343</b>	<b>355</b>	<b>337</b>	<b>329</b>	<b>319</b>	<b>311</b>	<b>329</b>	<b>328</b>	<b>296</b>	<b>294</b>	<b>265</b>	<b>220</b>	<b>267</b>
Ages 20–69 years	228	234	238	218	230	242	210	222	231	246	208	184	197	216	207	172	169	154	124	156

Note: Deaths were derived from place of usual residence and by year of registration.

Source: AIHW Mortality Database.

**Table 21: Age-specific and age-standardised death rates for cervical cancer, by age, Australia, 1981–2000**

Age group	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00
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	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	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	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	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
20–24	0.0	0.1	0.1	0.0	0.0	0.3	0.3	0.0	0.1	0.1	0.4	0.0	0.0	0.0	0.0	0.1	0.0	0.5	0.2	0.2
25–29	0.6	1.1	1.2	1.5	0.9	0.9	0.7	0.4	0.4	1.4	0.7	0.7	0.3	0.9	0.4	0.1	0.3	0.8	0.3	0.5
30–34	1.9	2.1	1.9	2.1	3.1	1.9	2.3	1.8	3.0	2.0	1.8	2.0	1.5	1.5	0.9	1.8	1.1	0.7	0.8	1.4
35–39	2.8	2.2	3.2	3.2	2.8	2.5	3.1	2.3	2.7	4.6	3.7	2.7	3.6	1.5	2.2	3.1	2.4	2.5	0.9	1.6
40–44	4.1	5.1	4.5	4.3	3.7	5.4	3.7	4.1	3.9	5.9	2.9	4.3	5.0	4.3	3.1	2.9	2.3	2.7	2.5	1.9
45–49	4.9	6.4	7.6	6.9	5.2	5.7	4.4	6.3	6.9	7.6	5.8	4.9	3.9	5.9	5.2	4.7	4.4	2.5	3.8	4.0
50–54	8.0	7.9	7.2	7.0	7.1	6.8	6.4	4.9	7.1	4.2	5.0	3.0	6.8	8.2	5.6	2.6	3.9	4.2	2.5	3.1
55–59	9.8	11.1	10.7	5.5	8.4	11.1	8.8	11.3	5.4	6.8	7.1	6.2	5.2	6.9	8.7	5.3	5.7	3.5	3.1	4.0
60–64	14.3	14.2	10.6	11.5	11.3	11.2	7.7	11.1	9.0	9.3	9.0	8.6	7.1	6.6	8.5	5.8	6.1	7.6	4.0	6.2
65–69	18.2	13.5	16.8	14.9	17.8	16.4	14.6	12.5	15.7	12.4	10.0	7.2	8.5	10.5	10.5	8.3	8.5	5.4	6.1	7.5
70–74	18.7	15.0	12.5	13.2	16.6	12.3	20.5	12.8	18.1	9.4	13.2	15.4	12.6	10.5	13.4	12.6	11.0	8.5	9.1	11.2
75–79	26.0	21.3	11.6	16.7	16.0	11.8	14.8	17.1	13.7	14.7	13.5	14.1	12.4	13.3	13.0	15.7	12.5	9.7	9.2	8.7
80–84	24.0	19.6	19.9	23.4	22.9	19.0	15.8	26.6	17.6	5.6	14.8	23.3	14.9	15.8	15.9	12.2	15.1	14.4	10.6	12.3
85+	24.9	22.7	25.6	24.7	33.1	24.9	16.1	16.7	20.9	23.2	29.4	19.5	19.3	18.4	14.6	16.6	20.1	19.9	12.7	15.2
<b>All ages</b>																				
AS rate (A)	6.2	5.9	5.5	5.4	5.7	5.4	5.0	5.1	5.2	4.9	4.6	4.3	4.1	4.3	4.2	3.7	3.5	3.1	2.5	3.0
As rate (W)	5.3	5.2	5.0	4.7	4.9	4.8	4.4	4.4	4.6	4.4	4.0	3.6	3.6	3.8	3.7	3.1	3.0	2.7	2.2	2.7
<b>Ages 20–69 years</b>																				
AS rate (A)	5.0	5.1	5.1	4.7	4.8	4.9	4.2	4.3	4.4	4.6	3.8	3.3	3.5	3.8	3.6	2.9	2.8	2.5	2.0	2.5
As rate (W)	5.0	5.1	5.1	4.6	4.7	4.9	4.1	4.3	4.4	4.5	3.8	3.3	3.5	3.8	3.6	2.8	2.8	2.5	2.0	2.5

*Notes*

1. Rates for all ages are based on data for women aged 15 years and over.
2. 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 22: Number of deaths from cervical cancer, by age, states and territories, 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	0	0	0	0	0	0	0	0
10–14	0	0	0	0	0	0	0	0	0
15–19	1	0	0	0	0	0	0	0	1
20–24	0	0	1	0	0	0	0	0	1
25–29	2	3	5	0	0	0	2	0	12
30–34	13	11	9	6	2	1	0	0	41
35–39	25	16	16	8	6	1	0	2	74
40–44	38	25	16	12	4	4	2	1	101
45–49	50	21	17	16	5	7	2	4	121
50–54	41	18	23	11	4	4	3	3	106
55–59	32	23	17	13	8	7	1	2	102
60–64	37	19	14	12	9	6	2	2	100
65–69	44	40	22	15	7	5	0	2	134
70–74	57	41	25	14	12	7	1	0	156
75–79	42	28	33	7	10	4	2	1	127
80–84	31	27	16	9	12	2	1	1	99
85+	30	26	9	10	9	4	2	0	90
<b>All ages</b>	<b>445</b>	<b>297</b>	<b>220</b>	<b>130</b>	<b>86</b>	<b>51</b>	<b>18</b>	<b>18</b>	<b>1,264</b>
<b>Ages 20–69 years</b>	<b>283</b>	<b>173</b>	<b>137</b>	<b>91</b>	<b>44</b>	<b>34</b>	<b>12</b>	<b>16</b>	<b>791</b>

*Notes*

1. Numbers were averaged over 4 years to smooth annual variations that may occur in the smaller states and territories.
2. Deaths were derived from place of usual residence and by year of registration.

Source: AIHW Mortality Database.



**Table 23: Age-specific and age-standardised death rates for cervical cancer, by age, states and territories, 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	0.0	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
15–19	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20–24	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
25–29	0.2	0.4	1.0	0.0	0.0	0.0	3.9	0.0	0.4
30–34	1.3	1.5	1.7	2.1	0.8	1.3	0.0	0.0	1.4
35–39	2.7	2.2	3.1	2.8	2.6	1.3	0.0	6.7	2.6
40–44	4.3	3.7	3.3	4.5	1.8	5.7	3.9	3.8	3.8
45–49	6.1	3.4	3.8	6.8	2.4	10.9	4.2	19.0	5.0
50–54	6.5	3.8	6.8	6.3	2.5	8.0	9.5	21.6	5.7
55–59	5.9	5.6	6.2	8.9	5.9	16.2	4.4	23.1	6.5
60–64	7.4	5.0	5.7	9.4	7.0	15.0	11.5	33.7	7.0
65–69	8.7	10.9	9.2	12.5	5.2	12.8	0.0	48.0	9.5
70–74	12.4	12.4	11.7	13.5	9.7	19.3	7.2	0.0	12.3
75–79	12.5	11.8	21.4	9.2	10.9	14.5	22.0	55.1	13.6
80–84	13.0	15.5	14.4	15.7	18.0	10.2	16.6	108.6	14.7
85+	16.5	18.6	10.5	22.1	17.3	28.1	47.2	0.0	17.2
<b>All ages</b>									
AS rate (A)	4.6	4.1	4.7	5.4	3.4	6.9	4.9	14.4	4.5
95% CI	4.1–5.0	3.6–4.5	4.0–5.2	4.3–6.2	2.7–4.1	4.9–8.7	2.6–7.2	7.2–22.5	4.3–4.8
As rate (W)	4.2	3.6	4.2	5.0	3.0	6.6	4.4	13.0	4.1
95% CI	3.8–4.6	3.2–4.0	3.6–4.7	4.0–5.8	2.3–3.6	4.7–8.5	2.3–6.6	7.0–19.7	3.9–4.3
<b>Ages 20–69 years</b>									
AS rate (A)	3.5	3.0	3.5	4.4	2.3	5.7	3.2	11.8	3.4
95% CI	3.1–4.0	2.5–3.4	2.9–4.0	3.4–5.2	1.6–2.9	3.7–7.5	1.5–5.2	5.8–18.8	3.2–3.7
As rate (W)	3.5	2.9	3.5	4.4	2.3	5.8	3.5	12.0	3.4
95% CI	3.1–4.0	2.4–3.3	2.8–3.9	3.3–5.2	1.6–3.0	3.8–7.7	1.6–5.6	6.0–19.0	3.2–3.7

*Notes*

1. The age-standardised rates were averaged over 4 years to smooth annual variations that may occur in the smaller states and territories.
2. Deaths were derived from place of usual residence and by year of registration.
3. Rates for all ages are based on data for women aged 20 years and over.
4. 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 24: Number of deaths from cervical cancer, by age, states and territories, 1997–2000**

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	0	0	0	0	0	0	0	0
10–14	0	0	0	0	0	0	0	0	0
15–19	0	0	0	0	0	0	0	0	0
20–24	2	2	1	0	0	0	0	0	5
25–29	1	4	5	2	1	0	1	0	14
30–34	7	5	5	8	3	1	0	0	29
35–39	21	12	10	6	2	3	0	2	56
40–44	26	14	14	7	0	1	3	2	67
45–49	33	22	17	9	10	0	3	2	96
50–54	34	12	18	5	4	3	2	1	79
55–59	26	12	18	9	3	2	1	1	72
60–64	25	19	23	8	5	8	0	1	89
65–69	37	14	16	12	9	4	4	0	96
70–74	45	36	21	14	8	4	1	2	131
75–79	39	28	18	7	9	4	2	2	109
80–84	34	27	12	12	7	2	0	1	95
85+	42	24	16	17	5	3	1	0	108
<b>All ages</b>	<b>372</b>	<b>231</b>	<b>194</b>	<b>116</b>	<b>66</b>	<b>35</b>	<b>18</b>	<b>14</b>	<b>1,046</b>
Ages 20–69 years	212	116	127	66	37	22	14	9	603

*Notes*

1. Numbers were averaged over 4 years to smooth annual variations that may occur in the smaller states and territories.
2. Deaths were derived from place of usual residence and by year of registration.

Source: AIHW Mortality Database.

**Table 25: Age-specific and age-standardised death rates for cervical cancer, by age, states and territories, 1997–2000**

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	0.0	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
15–19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20–24	0.2	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.2
25–29	0.1	0.5	0.9	0.7	0.5	0.0	1.9	0.0	0.5
30–34	0.7	0.7	1.0	2.9	1.4	1.5	0.0	0.0	1.0
35–39	2.1	1.6	1.8	2.0	0.9	4.0	0.0	6.3	1.9
40–44	2.7	2.0	2.7	2.5	0.0	1.4	6.0	7.2	2.4
45–49	3.8	3.4	3.5	3.4	4.7	0.0	6.2	8.5	3.7
50–54	4.4	2.1	4.2	2.3	2.1	5.1	4.9	5.5	3.4
55–59	4.3	2.7	5.6	5.5	2.0	4.3	3.7	9.0	4.1
60–64	4.8	4.9	8.8	5.9	3.9	19.8	0.0	14.3	5.9
65–69	7.5	3.9	6.7	9.9	7.3	10.6	25.0	0.0	6.9
70–74	9.6	10.5	9.5	12.9	6.5	11.4	6.9	61.2	9.9
75–79	10.0	9.9	9.8	8.0	8.6	13.3	16.9	96.3	10.0
80–84	13.1	14.5	9.8	20.4	10.1	9.7	0.0	78.3	13.1
85+	18.7	14.1	15.2	30.9	8.0	17.3	18.0	0.0	16.8
<b>All ages</b>									
AS rate (A)	3.4	2.9	3.6	4.2	2.5	4.5	4.4	11.1	3.4
95% CI	3.1–3.8	2.5–3.3	3.1–4.1	3.4–4.9	1.9–3.1	3.0–6.1	2.5–6.5	4.6–18.1	3.2–3.6
As rate (W)	3.1	2.5	3.4	3.6	2.2	4.1	4.0	8.5	3.0
95% CI	2.7–3.4	2.2–2.9	2.9–3.9	2.9–4.3	1.7–2.8	2.7–5.7	2.3–6.1	4.1–13.5	2.8–3.2
<b>Ages 20–69 years</b>									
AS rate (A)	2.5	1.9	2.9	2.9	1.8	3.5	3.7	4.4	2.4
95% CI	2.1–2.9	1.5–2.2	2.3–3.3	2.2–3.6	1.3–2.4	2.1–5.1	1.8–6.0	1.6–7.6	2.2–2.6
As rate (W)	2.5	1.9	2.9	2.8	1.8	3.5	3.6	4.5	2.4
95% CI	2.1–2.8	1.5–2.2	2.4–3.4	2.1–3.5	1.3–2.4	2.0–5.0	1.9–5.8	1.7–7.8	2.2–2.6

**Notes**

1. The age-standardised rates were averaged over 4 years to smooth annual variations that may occur in the smaller states and territories.
2. Deaths were derived from place of usual residence and by year of registration.
3. Rates for all ages are based on data for women aged 20 years and over.
4. 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 26: Number of deaths from cervical cancer, by age and location, 1993–1996 and 1997–2000**

Age group	Metropolitan		Rural		Remote	
	1993–1996	1997–2000	1993–1996	1997–2000	1993–1996	1997–2000
0–4	0	0	0	0	0	0
5–9	0	0	0	0	0	0
10–14	0	0	0	0	0	0
15–19	1	0	0	0	0	0
20–24	1	4	0	1	0	0
25–29	9	8	2	5	1	1
30–34	25	20	15	7	1	2
35–39	53	39	17	16	4	1
40–44	67	48	31	15	3	4
45–49	83	75	29	18	8	3
50–54	73	59	29	19	4	1
55–59	71	49	27	19	4	4
60–64	66	58	28	30	6	1
65–69	84	65	43	27	7	4
70–74	115	87	38	39	3	5
75–79	90	78	36	29	1	2
80–84	70	71	28	19	1	5
85+	67	74	24	32	0	2
<b>All ages</b>	<b>873</b>	<b>735</b>	<b>349</b>	<b>276</b>	<b>42</b>	<b>35</b>
Ages 20–69 years	531	425	222	157	37	21

*Notes*

1. Deaths were derived from place of usual residence and by year of registration.
2. The number of deaths is presented as 4-year rolling blocks of data.

Source: AIHW Mortality Database.

**Table 27: Age-specific and age-standardised death rates for cervical cancer, by age and location, 1993–1996 and 1997–2000**

Age group	Metropolitan		Rural		Remote	
	1993–1996	1997–2000	1993–1996	1997–2000	1993–1996	1997–2000
0–4	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
10–14	0.0	0.0	0.0	0.0	0.0	0.0
15–19	0.1	0.0	0.0	0.0	0.0	0.0
20–24	0.0	0.0	0.0	0.2	0.2	0.0
25–29	0.4	0.3	1.0	0.4	0.8	1.0
30–34	1.2	2.1	1.0	1.0	1.1	2.2
35–39	2.6	2.3	4.6	1.8	2.1	1.1
40–44	3.5	4.7	4.1	2.4	2.1	5.3
45–49	4.7	4.9	12.9	3.9	2.7	4.7
50–54	5.4	6.1	8.5	3.5	3.3	1.8
55–59	6.4	6.3	11.1	3.9	3.9	10.0
60–64	6.6	7.0	21.3	5.6	6.9	3.4
65–69	8.5	10.8	30.4	6.7	6.7	17.0
70–74	12.7	11.0	17.1	9.3	10.6	27.1
75–79	13.5	14.2	8.2	10.0	9.8	14.9
80–84	14.4	15.6	11.8	13.7	9.7	50.5
85+	17.6	17.0	0.0	16.0	18.6	21.1
<b>All ages</b>						
AS rate (A)	4.4	3.3	4.7	3.4	7.9	6.2
95% CI	4.1–4.7	3.1–3.6	4.2–5.2	3.0–3.8	5.4–10.3	4.0–8.3
As rate (W)	3.9	3.0	4.2	3.0	7.8	5.1
95% CI	3.7–4.2	2.7–3.2	3.8–4.7	2.6–3.4	5.4–10.1	3.4–6.9
<b>Ages 20–69 years</b>						
AS rate (A)	3.2	2.4	3.6	2.4	7.4	3.7
95% CI	3.0–3.5	2.2–2.6	3.2–4.1	2.1–2.8	5.0–9.9	2.2–5.4
As rate (W)	3.2	2.4	3.6	2.4	7.4	3.6
95% CI	3.0–3.5	2.2–2.6	3.1–4.1	2.1–2.8	5.0–9.9	2.1–5.2

*Notes*

1. The age-standardised rates are presented as 4-year rolling blocks of data.
2. Deaths were derived from place of usual residence and by year of registration.
3. Rates for all ages are based on data for women aged 20 years and over.
4. 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 28: Number of deaths from cervical cancer, by age and Indigenous status, 1995–1998, 1996–1999 and 1997–2000**

Age group	Indigenous			Non-Indigenous		
	1995–1998	1996–1999	1997–2000	1995–1998	1996–1999	1997–2000
0–4	0	0	0	0	0	0
5–9	0	0	0	0	0	0
10–14	0	0	0	0	0	0
15–19	0	0	0	0	0	0
20–24	0	0	0	0	0	0
25–29	0	1	1	5	5	6
30–34	1	1	2	8	8	13
35–39	3	2	2	19	11	15
40–44	4	5	5	9	19	17
45–49	5	2	5	19	21	30
50–54	0	1	0	14	19	21
55–59	1	1	2	26	17	24
60–64	4	2	2	22	27	34
65–69	4	2	3	18	20	31
70–74	2	3	4	23	34	35
75+	1	3	3	75	76	91
<b>All ages</b>	<b>25</b>	<b>23</b>	<b>29</b>	<b>235</b>	<b>256</b>	<b>317</b>
Ages 20–69 years	22	17	22	138	147	191

*Notes*

1. Deaths were derived from place of usual residence and by year of registration.
2. The number of deaths is presented as 4-year rolling blocks of data.
3. Only Queensland (from 1998), South Australia, Western Australia and the Northern Territory have Indigenous death registration data considered to be of a publishable standard.

*Source:* AIHW Mortality Database.

**Table 29: Age-specific and age-standardised death rates for cervical cancer, by age and Indigenous status, 1995–1998, 1996–1999 and 1997–2000**

Age group	Indigenous			Non-Indigenous		
	1995–1998	1996–1999	1997–2000	1995–1998	1996–1999	1997–2000
0–4	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
10–14	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
20–24	0.0	0.0	0.0	0.0	0.0	0.0
25–29	0.0	2.8	2.5	0.8	0.7	0.7
30–34	3.8	3.3	5.6	1.2	1.1	1.5
35–39	14.0	7.8	6.7	2.8	1.4	1.6
40–44	23.5	24.5	20.7	1.4	2.5	1.9
45–49	39.2	13.0	27.1	3.2	2.9	3.5
50–54	0.0	8.5	0.0	2.9	3.1	2.8
55–59	14.5	12.5	21.4	6.9	3.7	4.3
60–64	72.1	31.0	27.0	6.8	6.9	7.3
65–69	98.9	42.1	55.3	5.8	5.5	7.3
70–74	81.9	101.8	115.6	7.9	9.9	8.8
75+	30.6	79.7	70.6	14.7	12.1	12.1
<b>All ages</b>						
AS Rate (A)	26.5	17.4	19.7	2.6	2.3	2.5
95% CI	15.8–38.0	9.2–26.4	11.5–28.8	2.2–3.0	2.0–2.7	2.2–2.8
As Rate (W)	22.9	16.7	18.2	3.2	2.8	3.0
95% CI	13.8–32.8	9.3–24.5	11.7–25.6	2.7–3.6	2.5–3.2	2.7–3.3
<b>Ages 20–69 years</b>						
AS Rate (A)	17.5	10.6	11.3	2.3	1.9	2.1
95% CI	8.8–26.5	5.2–17.1	6.2–17.1	1.9–2.7	1.6–2.3	1.7–2.4
As Rate (W)	20.5	11.4	12.9	2.6	2.3	2.5
95% CI	11.5–29.4	6.0–17.8	7.6–18.8	2.1–3.0	1.9–2.6	2.1–2.8

*Notes*

1. The age-standardised rates are presented as 4-year rolling blocks of data.
2. Deaths derived from place of usual residence and by year of registration.
3. Rates for all ages are based on data for women aged 20 years and over.
4. Rates are expressed per 100,000 women and age-standardised to the Australian 1991 population (A) and the World Standard Population (W).
5. Only Queensland (from 1998), South Australia, Western Australia and the Northern Territory have Indigenous death registration data considered to be of a publishable standard.

Source: AIHW Mortality Database.

# Appendixes



## **Appendix A Cervical cancer: symptoms, detection and treatment**

Cervical cancer affects the cells of the cervix, which is the lower part of the womb or uterus as it joins the inner end of the vagina. Like other cancers, cervical cancer is a disease where normal cells change, begin to multiply out of control, and form a growth or tumour. The cancer may arise from the squamous cells at the transformation zone where the squamous cells on the outside of the cervix join the columnar cells in the lining of the cervical canal (squamous cell carcinoma) or from the cells in the cervical canal (adenocarcinoma). Over two-thirds of cervical cancers are squamous cell carcinomas, which are most easily detected on the Pap smear, while about 20% are adenocarcinomas. If not detected early, the tumour can invade local tissue and spread or metastasise to other parts of the body. The main symptoms of cervical cancer are unusual bleeding from the vagina, and very rarely an unusual vaginal discharge. However, these symptoms are quite common and may not be due to cancer.

A cervical cancer may take 10 or more years to develop, but before this the cells may show pre-cancerous changes. These early changes can be detected by a Pap smear which is described in more detail below, and with early treatment of these abnormalities, cervical cancer can be prevented. The most recent classification of these pre-cancerous lesions has two levels of severity: low-grade epithelial abnormalities (LGEA) and high-grade epithelial abnormalities (HGEA). An earlier classification described various grades of cervical intra-epithelial neoplasia (CIN). Low-grade abnormalities include minor changes in squamous cells and CIN 1 while high-grade abnormalities include CIN 2, CIN 3, squamous carcinoma-in-situ, adenocarcinoma in situ and invasive carcinoma (squamous or adenocarcinoma).

The Pap smear is the most common way to detect pre-cancerous changes, which rarely cause any symptoms. The test involves a doctor inserting a speculum into the vagina and gently scraping the surface of the cervix. This process collects cells that are transferred onto a slide or into a special liquid, which is then sent to a pathology laboratory for assessment. Pap smears are offered by general practitioners, gynaecologists, family planning clinics, women's health centres, hospital outpatient clinics and in some circumstances specially trained nurses.

If the Pap smear shows an abnormality, the woman may be advised to have a repeat Pap smear if the abnormality is low-grade or she may be advised to have a colposcopy. With colposcopy, a doctor is able to look directly at the cervix under magnification using an instrument called a colposcope. Using a special stain the doctor can highlight any suspicious area, which may be pre-cancerous or cancerous. The doctor will then take a tissue sample (a biopsy) of the suspicious area for further examination by the pathologist.

Pre-cancerous changes can easily be treated to prevent the progression to cervical cancer. The type of treatment depends on whether the change observed is low or high grade, the woman's age and general health, whether she wants to have children, and her preferences.

- There is a range of treatments for pre-cancerous changes, including laser treatment, loop excision (LLETZ), cryosurgery (cold coagulation), electrodiathermy, or cone biopsy, (either by laser or by scalpel). In a small number of instances, a hysterectomy may be necessary.

For invasive cancer, a cone biopsy or hysterectomy is generally performed. If the cancer cells are only detected on the surface of the cervix, it may be treated by a cone biopsy. If it has invaded deeper into the cervix, a hysterectomy is generally performed. In advanced cases, a radical hysterectomy is needed to remove the cervix and uterus along with a margin of tissue around the cervix and lymph nodes from the pelvis. Radiotherapy is sometimes used as well as surgery, and for more advanced cases it may be used on its own.

## Appendix B: Data sources and limitations

All data used in this report are based on calendar years. Data are derived from multiple sources and are summarised below.

**Table B1: Cervical cancer screening indicators data sources**

Indicator	Description	Data source
1	Participation rate for cervical cancer screening	National Cervical Screening Program
2	Early re-screening	National Cervical Screening Program
3	Low-grade abnormality detection	National Cervical Screening Program
4	High-grade abnormality detection	National Cervical Screening Program
5	Incidence of micro-invasive cervical cancer (ICD-10 C53, Histology 8076)	National Cancer Statistics Clearing House
6, 8	Incidence of squamous, adenocarcinoma, adeno-squamous and other cervical cancer (ICD-10 C53)	National Cancer Statistics Clearing House
7, 9, 10	Mortality from cervical cancer (ICD-9 180) For 1999 data (ICD10 C53)	AIHW Mortality Database

## Population data

The Australian Bureau of Statistics estimated resident female population has been used to calculate incidence and mortality rates. Participation rates were calculated using the average of the 1998 and 1999 estimated resident female population (see Appendix D for tables). There may be some variation in published participation rates because national rates use estimated resident population data in the denominator whereas local data analysis may use census counts. The denominator population used to calculate cervical screening participation rates has been adjusted by the estimated proportion of women who have had a hysterectomy by age. These data were derived from the 1995 National Health Survey, and are tabled in Appendix D.

The age-standardised rates in this publication are calculated using the total estimated 1991 mid-year Australian resident population. Where appropriate, rates are also standardised to the World Standard Population for international comparison. Both the Australian and World Standard Populations are in Appendix D.

## Indigenous mortality data

Due to the difficulties of Indigenous identification, mortality data used in Indicator 10 are based on deaths in Queensland (for 1998, 1999 and 2000), Western Australia, South Australia and the Northern Territory only.

## Other data limitations

- Hysterectomy fractions are calculated using national data derived from the National Health Survey using aggregate data that do not necessarily reflect variation at the state or territory level.
- Participation rates will be underestimates to the extent that a small percentage of women choose to opt-off local registers and have been excluded from the statistics in this report.

- The participation numbers for states and territories other than Western Australia and Australian Capital Territory, and the Australian totals, may be over-estimated because of double counting of some women in registers. This may be the result of difficulty in identifying state or territory of residence for women in border areas and the inclusion in registers of women resident overseas.
- Participation rates published by state and territory programs may differ from those in this publication because of variation in denominators used.

## Appendix C: Methods

This section describes the methods employed to calculate the estimates presented in the tables in the body of this publication.

### Crude rates

A crude rate is defined as the number of events over a specified period of time (e.g. a year) divided by the total population. For example, a crude cancer incidence rate is similarly defined as the number of new cases of cancer in a specified period of time divided by the population at risk. Crude death rates and cancer incidence rates are expressed in this report as rates per 100,000 population. Crude participation rate is expressed as a percentage.

### Age-specific rates

Age-specific rates are calculated by dividing the number of cases occurring in each specified age group by the corresponding population in the same age group expressed as a percentage or a rate per 1,000 or 100,000 population. This rate may be calculated for particular age and sex groupings, e.g.

$$\begin{aligned} \text{Age-specific} \\ \text{cervical cancer} \\ \text{incidence rate in} \\ \text{females aged 50-54} \end{aligned} &= \frac{\text{New cases 1997 aged 50 – 54 years}}{\text{1997 female population aged 50 – 54 years}} \times 100,000 \\ &= \frac{76}{536,230} \times 100,000 \\ &= 14.2 \text{ per } 100,000 \end{aligned}$$

### Age-standardised rates (AS rate)

Rates are adjusted for age to facilitate comparisons between populations that have different age structures, e.g. between youthful and ageing communities. There are two different methods commonly used to adjust for age. In this publication we use direct standardisation in which age-specific rates are multiplied against a constant population (the Australian 1991 Population Standard unless otherwise specified). This effectively removes the influence of age structure on the summary rate that is described as the age-standardised rate. The method may be used for the calculation of participation, incidence and mortality rates. The method used for this calculation comprises three steps.

**Step 1:** Calculate the age-specific rate (as shown above) for each age group.

**Step 2:** Calculate the expected number of cases in each 5-year age group by multiplying the age-specific rates by the corresponding standard population and dividing by 100,000, giving you the expected number of cases.

**Step 3:** Sum the expected number of cases in each age group to give the age-standardised rate. Divide this sum by the total of the standard population and multiply by 100,000.

## **Confidence intervals**

Population numbers for incidence, mortality and screening have a natural level of variability for a single year above and below what might be expected in the mean over many years. The percentage variability is small for large population numbers but high for small numbers such as mortality in a young age group. One measure of the likely difference is the standard error, which indicates the extent to which a population number might have varied by chance in only one year of data.

In the 95% confidence interval there are about 19 chances in 20 that the difference will be less than two standard errors.

The 95% confidence intervals in this report were calculated using the software package Palisade @risk (<http://www.palisade.com>). These calculations were based on 1,000 simulations using a binomial or Poisson distribution with the observed data to calculate the distribution parameters.

## Appendix D: Population data

Table D1: Australian Standard Population and World Standard Population

Age group	World Standard Population (W)	Australian 1991 Population Standard (A)
0–4	12,000	1,271,703
5–9	10,000	1,272,208
10–14	9,000	1,241,619
15–19	9,000	1,364,074
20–24	8,000	1,396,764
25–29	8,000	1,399,663
30–34	6,000	1,425,735
35–39	6,000	1,328,387
40–44	6,000	1,294,271
45–49	6,000	1,029,145
50–54	5,000	846,934
55–59	4,000	725,950
60–64	4,000	736,868
65–69	3,000	671,390
70–74	2,000	510,755
75–79	1,000	384,495
80–84	500	229,828
85+	500	154,247
<b>Total</b>	<b>100,000</b>	<b>17,284,036</b>

Sources: Australian Bureau of Statistics 1993 (for Australian Standard Population);  
Doll and Smith 1982 (for World Standard Population).

**Table D2: Hysterectomy fractions for women aged 15–80+ years, Australia, 1995**

Age group	% of women who have not had a hysterectomy
18–19	98.4
20–24	99.8
25–29	99.3
30–34	98.0
35–39	91.9
40–44	85.2
45–49	79.1
50–54	68.5
55–59	68.5
60–64	67.8
65–69	68.8
70–74	66.8
75–79	66.8
80+	61.5
<b>Total</b>	<b>84.3</b>

Source: ABS 1995.

**Table D3: Estimated resident female populations, by age, states and territories, June 1999**

<b>Age group</b>	<b>NSW</b>	<b>Vic</b>	<b>Qld</b>	<b>WA</b>	<b>SA</b>	<b>Tas</b>	<b>ACT</b>	<b>NT</b>	<b>Australia</b>
0–4	210,825	149,345	117,830	61,742	46,022	15,373	10,369	8,481	620,101
5–9	217,147	157,607	124,506	64,778	48,311	16,591	10,727	8,378	648,219
10–14	213,517	155,122	122,073	66,783	48,963	17,091	10,794	7,465	641,992
15–19	214,180	157,811	125,527	65,940	49,288	16,951	11,568	7,015	648,380
20–24	218,587	167,569	125,120	67,885	48,428	14,750	13,024	7,837	663,257
25–29	248,403	186,122	136,228	71,363	52,440	16,005	13,157	9,524	733,363
30–34	236,656	181,447	128,549	69,303	53,023	16,123	12,164	8,579	706,004
35–39	254,383	187,302	139,312	74,660	58,441	18,625	12,635	8,055	753,568
40–44	238,135	176,533	130,717	71,804	56,080	17,940	12,380	6,971	710,706
45–49	220,757	164,621	122,514	66,279	53,683	16,750	12,104	6,019	662,831
50–54	198,358	147,675	110,532	56,265	48,969	15,085	10,507	4,711	592,163
55–59	154,145	113,036	82,604	41,983	37,196	11,878	6,866	2,900	450,656
60–64	131,505	96,830	66,557	34,641	32,448	10,136	4,947	1,767	378,852
65–69	121,817	90,079	59,234	30,379	30,570	9,450	4,002	1,178	346,720
70–74	117,014	85,765	55,803	27,180	30,571	8,771	3,655	818	329,585
75–79	100,326	73,381	46,982	22,832	26,932	7,774	3,118	538	281,885
80–84	121,721	89,214	57,646	28,481	33,150	9,534	3,227	592	343,574
<b>Total</b>	<b>3,217,476</b>	<b>2,379,459</b>	<b>1,751,734</b>	<b>922,298</b>	<b>754,515</b>	<b>238,827</b>	<b>155,244</b>	<b>90,828</b>	<b>9,511,856</b>

Source: AIHW Population Database based on estimated resident population data compiled by ABS.



**Table D4: Estimated resident female populations, states and territories, June 2000**

<b>Age group</b>	<b>NSW</b>	<b>Vic</b>	<b>Qld</b>	<b>WA</b>	<b>SA</b>	<b>Tas</b>	<b>ACT</b>	<b>NT</b>	<b>Australia</b>
0–4	209,570	148,031	117,729	61,561	45,105	14,905	10,325	8,534	615,872
5–9	216,795	157,690	125,521	64,597	48,156	16,421	10,517	8,385	648,246
10–14	214,943	156,611	123,876	67,245	48,752	16,800	10,683	7,634	646,729
15–19	216,913	160,267	127,720	67,397	49,936	17,112	11,511	7,063	658,049
20–24	219,669	169,075	125,263	68,444	47,967	14,484	13,098	7,800	665,858
25–29	249,540	185,647	136,576	71,540	51,294	15,619	13,084	9,306	732,705
30–34	238,393	183,782	130,487	69,712	52,481	16,058	12,183	8,888	712,133
35–39	251,930	186,833	139,889	74,320	57,412	18,059	12,419	8,103	749,138
40–44	242,164	179,754	134,059	72,796	57,102	18,108	12,421	7,077	723,621
45–49	223,345	167,055	124,623	67,886	53,884	16,915	12,057	6,170	672,047
50–54	204,510	153,221	114,902	59,095	50,423	15,571	10,857	4,960	613,603
55–59	160,386	117,391	88,137	43,873	38,973	12,256	7,321	3,119	471,505
60–64	133,989	99,251	69,300	35,667	33,043	10,502	5,188	1,850	388,816
65–69	120,637	89,476	59,746	30,668	30,146	9,427	4,091	1,237	345,436
70–74	117,083	86,092	56,242	27,745	30,371	8,810	3,684	859	330,898
75–79	101,838	74,602	48,218	22,980	27,379	7,808	3,211	532	286,572
80+	126,622	92,989	60,220	29,796	34,403	9,943	3,462	632	358,075
<b>Total</b>	<b>3,248,327</b>	<b>2,407,767</b>	<b>1,782,508</b>	<b>935,322</b>	<b>756,827</b>	<b>238,798</b>	<b>156,112</b>	<b>92,149</b>	<b>9,619,303</b>

Source: AIHW Population Database based on estimated resident population data compiled by ABS.

## Appendix E: NHMRC guidelines for the management of women with screen-detected abnormalities

This reference sheet is a summary of the NHMRC guidelines for the management of women with screen-detected abnormalities. It is intended to assist medical practitioners to take appropriate action on receipt of Pap smear reports.

Low-grade epithelial abnormalities		
Pap smear report	Investigation	Management
Non-specific minor squamous cell changes/atrophia		Repeat smear at 12-monthly intervals until it reverts to normal.
Minor changes in endocervical cells/ low-grade glandular change	Repeat smear in 6 months using cytobrush and spatula. If low-grade abnormality persists, refer for colposcopy and biopsy if indicated.	If endocervical cell abnormality confirmed, refer to gynaecologist for appropriate treatment.
HPV effect/HPV-associated cell changes	Repeat smear at 6-monthly intervals. If HPV-associated cell changes persist after 12 months, refer for colposcopy.	If HPV confirmed, continue with 6-monthly smears until two negative reports are received. Repeat smear annually for 2 years then revert to 2-yearly screening.
Possible CIN 1 ± HPV/possible mild dysplasia	Repeat smear at 6-monthly intervals until two successive negative reports are received. If lesion persists for 12 months, refer for colposcopy.	If CIN 1 confirmed, follow either observational or active management program as explained on reverse of sheet.
CIN 1 ± HPV/mild dysplasia	Refer for colposcopy and biopsy if indicated.	If CIN 1 confirmed, follow either observational or active management program as explained on reverse of sheet. If higher grade abnormality diagnosed, see below.

High-grade epithelial abnormalities		
Pap smear report	Investigation	Management
CIN 2 ± HPV/moderate dysplasia	Refer for colposcopy and directed biopsy.	If CIN 2 confirmed, treatment by gynaecologist with appropriate expertise is required.
CIN 3 ± HPV/severe dysplasia	Refer for colposcopy and directed biopsy.	If CIN 3 confirmed, treatment by gynaecologist with appropriate expertise is required.
CIN 3 ± HPV with possible invasion; endocervical glandular dysplasia; or adenocarcinoma in situ	Refer to gynaecologist with expertise in colposcopic evaluation of malignancies.	Treatment by gynaecologist with appropriate expertise is required.
Invasive squamous cell carcinoma (SCC) or adenocarcinoma	Refer to gynaecologist skilled in the management of malignancies, or a specialist unit, for urgent evaluation and management.	Treatment by gynaecologist with appropriate expertise is required.
Inconclusive — abnormal cells highly suggestive but not diagnostic of a high-grade abnormality	Refer for colposcopy and possible biopsy, unless there is an obvious diagnostic difficulty, e.g. epithelial atrophy or infection. In this case, treat the problem and repeat the smear.	If high-grade lesion confirmed, treatment by gynaecologist with appropriate expertise is required.

## Management of women with low-grade epithelial abnormalities

A cytological assessment of CIN 1 requires referral for colposcopy and, if indicated, biopsy. There is controversy over the management—**observational** and **active**. Both treatment options should be fully discussed with the woman.

### Observational management

If the diagnosis of CIN 1 is confirmed and the woman elects not to be treated, cervical smears should be taken at 6-monthly intervals until the abnormality either regresses or progresses. After two negative smears at 6-monthly intervals, smears should be taken at yearly intervals. If two consecutive annual smears are normal, the woman can revert to 2-yearly screening.

### Active management

Treatment by an accepted method, either ablative or excisional.

Pap smear report	Management
Negative/within normal limits	Repeat smear in 2 years.
Negative/within normal limits and no endocervical cells present	Repeat smear in 2 years.
Negative with inflammation	Repeat smear in 2 years.
<i>Note: Investigate any symptoms that are not readily explained, such as post-coital or intermenstrual bleeding. A negative Pap smear must not be taken as reassurance in these circumstances. Further investigation may involve referral to a gynaecologist.</i>	
Unsatisfactory	Repeat smear in 6–12 weeks, with treatment and where possible correction of any problems beforehand if appropriate.

<b>Post-treatment assessment</b>	After initial post-treatment colposcopic assessment by gynaecologist, repeat smear at 6-monthly intervals for 1 year. Following treatment of a high-grade epithelial abnormality, smears should be repeated yearly thereafter. Following treatment for a low-grade epithelial abnormality, revert to normal 2-yearly screening after two consecutive normal smears at yearly intervals.
<b>Special circumstances</b>	
Total hysterectomy for CIN	Annual smears from vaginal vault for 5 years, then revert to 2-yearly smears.
Total hysterectomy for benign causes	No further smears required if previous smears were negative. Baseline smear if reason for hysterectomy and/or previous Pap smear history unknown.
Subtotal hysterectomy for benign causes—cervix present	Continue normal 2-yearly screening.
Abnormality during pregnancy	Refer for colposcopy during 1st trimester to exclude invasive disease. If confirmed high-grade abnormality, repeat colposcopy during mid-trimester to exclude progression. Lesion should be reassessed 8 weeks post-partum.

# Glossary

**Ablative therapy:** the destruction of cells on the surface of the cervix using laser therapy, chemicals or diathermy.

**ABS:** Australian Bureau of Statistics.

**Adjuvant:** enhancing or administered to enhance the effectiveness of a treatment or substance.

**AHMAC:** Australian Health Ministers' Advisory Council.

**AIHW:** Australian Institute of Health and Welfare.

**AS rate:** age-standardised rate.

**ASGC:** Australian Standard Geographical Classification: the classification designed by the ABS to define the geography of Australia.

**Basement membrane:** the delicate, non-cellular layer on which an epithelium is seated. The epithelium forms the surface portion of the skin and lines hollow organs and all passages of the respiratory, digestive and genito-urinary systems.

**Benign:** not malignant.

**Cancer (malignant neoplasm):** a term used to describe one of several diseases which result when the process of cell division, by which tissues normally grow and renew themselves, becomes uncontrolled and leads to the development of malignant cells. These cancer cells multiply in an uncoordinated way, independently of normal growth control mechanisms, to form a tumour. This tumour may expand locally by invasion or systemically by metastasis via the lymphatic or vascular systems. If left untreated most malignant tumours will eventually result in death.

**Cancer death:** a death where the underlying cause is indicated as cancer. Persons with cancer dying of other causes are not counted in the death statistics in this publication.

**CIN (cervical intraepithelial neoplasia):** Squamous cell carcinoma of the cervix is mostly preceded, over a period of years, by a spectrum of asymptomatic abnormalities known as cervical intraepithelial neoplasia (CIN) graded as CIN I (mild dysplasia), CIN II (moderate dysplasia) and CIN III (severe dysplasia and carcinoma in situ). CIN usually occurs at least a decade before cervical cancer. If CIN remains untreated, some women will develop cervical cancer while others will progress to invasive cervical cancer, despite treatment (Jelfs 1995).

**Colposcopy:** an examination of the lower genital tract with a magnifying instrument called a colposcope. This method of conservative evaluation allows the clinician to more accurately assess the cytologic abnormality by focussing on the areas of greatest cellular abnormality and by sampling them with a punch biopsy to attain diagnosis.

**DHA:** Commonwealth Department of Health and Ageing (since November 2001).

**DHAC:** Commonwealth Department of Health and Aged Care (October 1998 to November 2001).

**DHFS:** Commonwealth Department of Health and Family Services (from 1996 to October 1998).

**DHSH:** Commonwealth Department of Human Services and Health (1994–1996).

**Epidemiology:** the quantitative study of the distribution and determinants of health-related states and events in populations, and the application of this study to the control of health problems.

**HGA:** high-grade abnormalities as defined for this report include CIN 1/2, CIN 2, CIN 3 or adenocarcinoma in situ.

**HPV:** Human papilloma virus.

**Hysterectomy:** refers to the surgical procedure whereby all or part of the uterus is removed.

**Hysterectomy fractions:** the proportion of women who have had their uterus removed by hysterectomy.

**ICD-10:** International Classification of Disease – a coding system used to identify the primary site of the malignancy. This classification is in its tenth revision.

**Incidence:** see *new cancer case*.

**Intraepithelial:** refers to that area within the layer of cell tissues forming the epidermis of a body cavity. These cells comprise contiguous cells having minimum intercellular substance.

**Invasive cancer:** a tumour whose cells have a tendency to invade healthy or normal tissues.

**LGA:** low-grade abnormalities include atypia, warty atypia (human papilloma virus (HPV) effect), possible CIN, equivocal CIN, CIN 1 or endocervical dysplasia not otherwise specified (NOS).

**Lymph node:** masses of lymphatic tissue, often bean-shaped, that produce lymphocytes and through which lymph filters. These are located throughout the body.

**Metastasis:** the process by which a disease is transferred from one part of the body to another, for example, via the lymphatic system or the bloodstream.

**Mortality:** see *cancer death*

**New cancer case:** a person who has a new cancer diagnosed for the first time. One person may have more than one cancer and therefore may be counted twice in incidence statistics if it is decided that the two cancers are not of the same origin. This decision is based on a series of principles set out in more detail in a publication by Jensen et al. (1991).

**NOS:** i.e. otherwise specified.

**Pap smear:** a test prepared for the study of exfoliated cells from the cervix (refer to Appendix A Cervical cancer: symptoms, detection and treatment).

**Post-partum:** following childbirth.

**Radiation therapy:** the treatment of disease with any type of radiation, most commonly with ionising radiation, such as X-rays, beta rays and gamma rays.

**RRMA:** Rural, Remote and Metropolitan Areas classification.

**Screening:** the performance of tests on apparently well people in order to detect a medical condition at an earlier stage than would otherwise be the case.

**Sensitivity:** the proportion of individuals with the disease whom the screening test labels positive.

**Stroma:** the supporting framework of an organ.

**The Institute:** the Australian Institute of Health and Welfare.

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