

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).

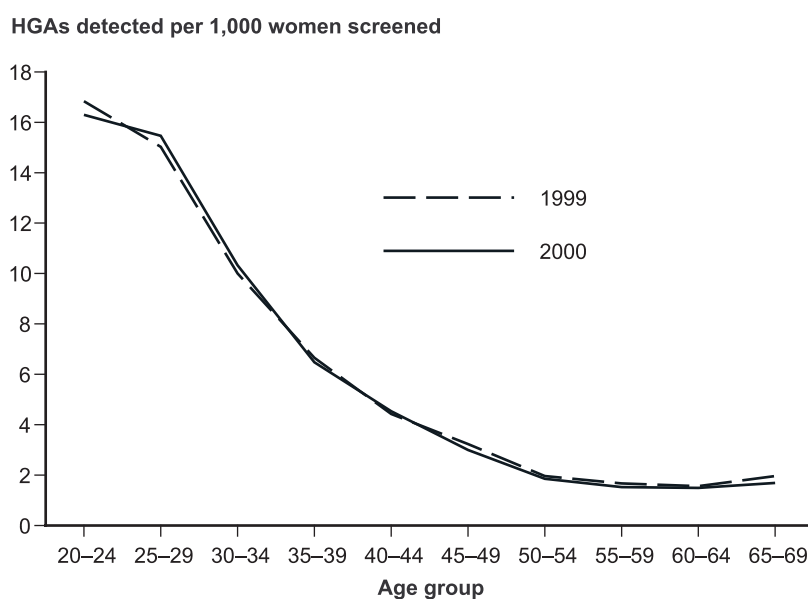
State- and territory- specific issues

- 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 137 and 138).



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.

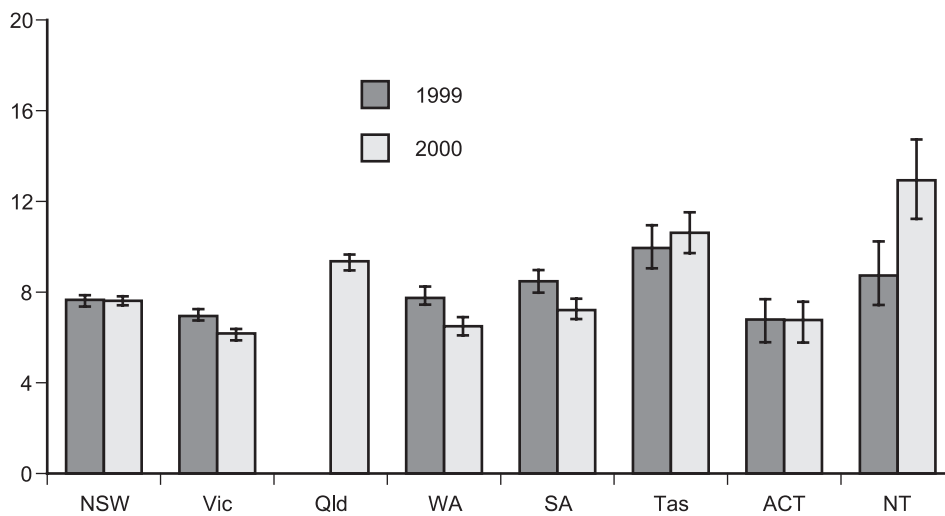
Figure 6: High-grade abnormalities per 1,000 women, by age group, Australia, 1999 and 2000

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	
	(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. 143).

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 & Mulvany 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.

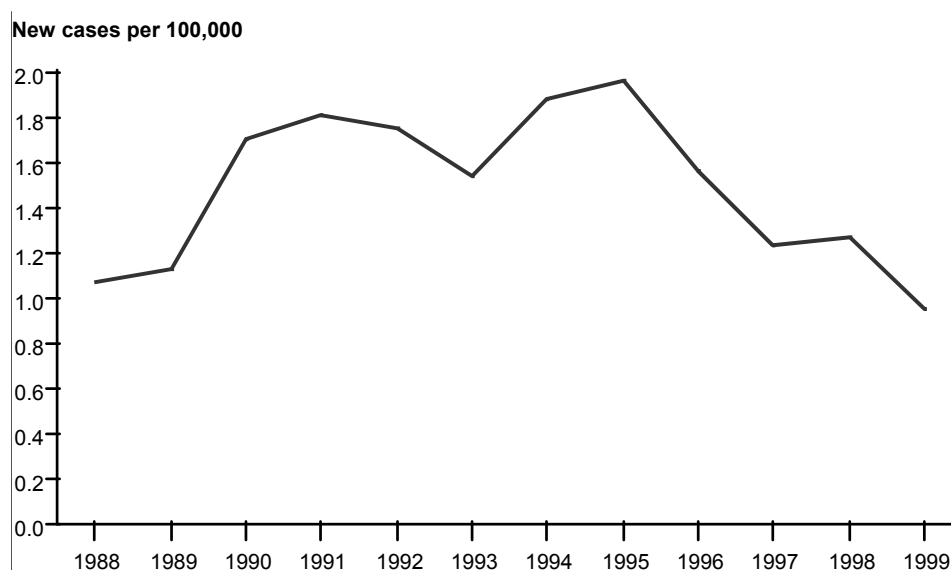
In interpreting cervical cancer incidence statistics, it should be noted that cervical screening has been available on an ad hoc basis since the 1960s, but it is only since the late 1980s and early 1990s that there has been an organised national approach to screening at a population level. The introduction 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 145).



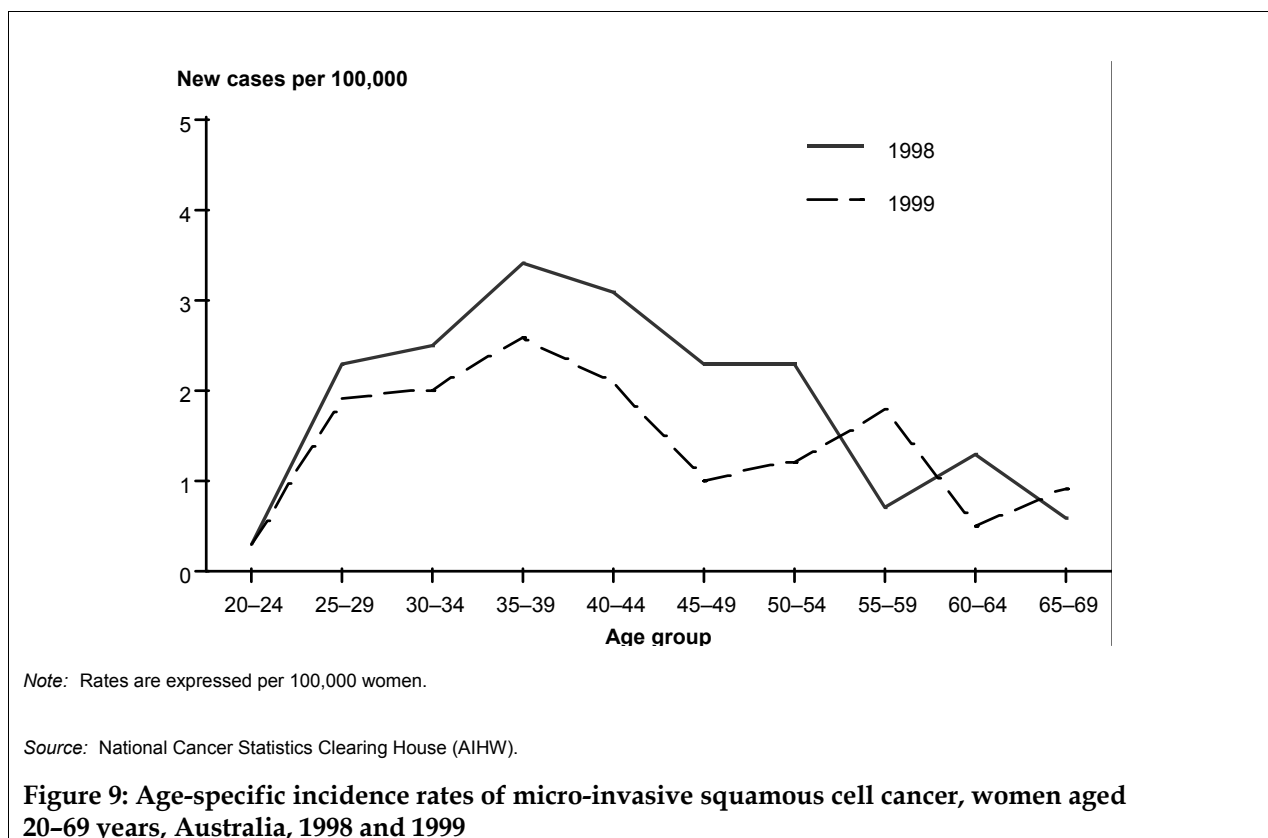
Note: Rates are expressed per 100,000 women and age-standardised to the Australian 1991 population.

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 145).
- 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 144).
- 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 144 and 145).



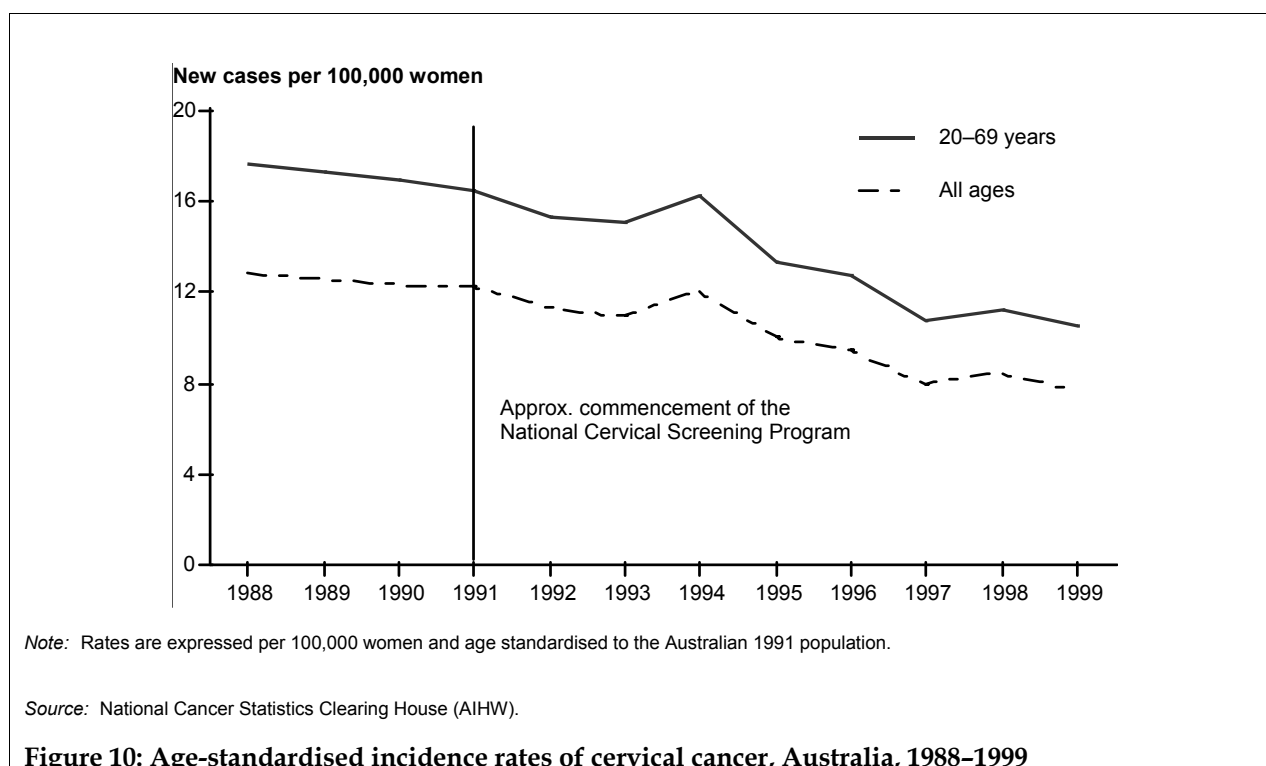
Year	Age group									
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69
1998	0.3	2.3	2.5	3.4	3.1	2.3	2.3	0.7	1.3	0.6
1999	0.3	1.9	2.0	2.6	2.1	1.0	1.2	1.8	0.5	0.9

- 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 144 and 145).

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

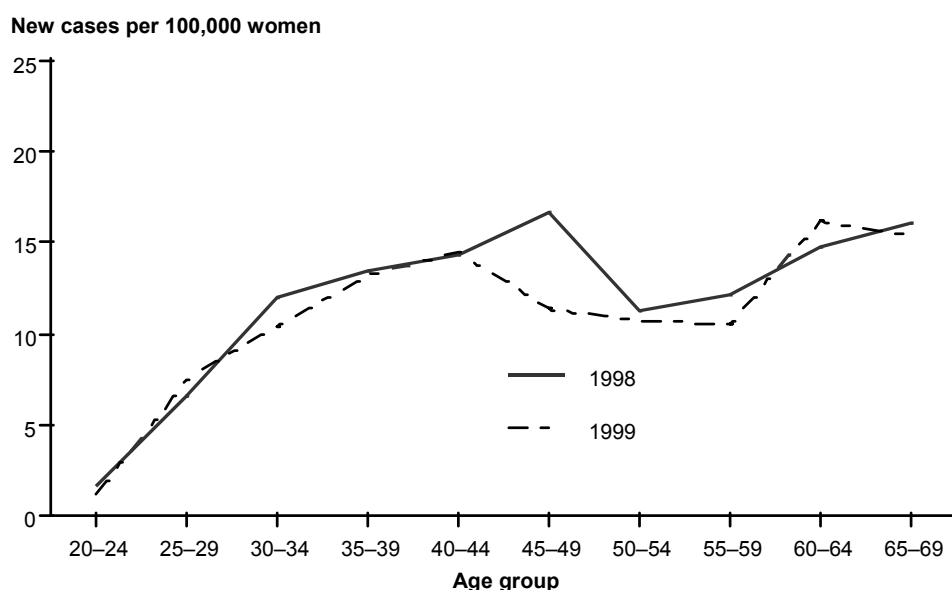
Incidence rates of squamous, adenocarcinoma, adeno-squamous and other cervical cancer per 100,000 estimated resident female population in a 12-month period, by 5-year age groups (20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84, 85+) and for the target age group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

For detailed data refer to Table 13 (page 147).



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 147).
- 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 146).
- 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 147).



Refer to Table 13 (page 147).

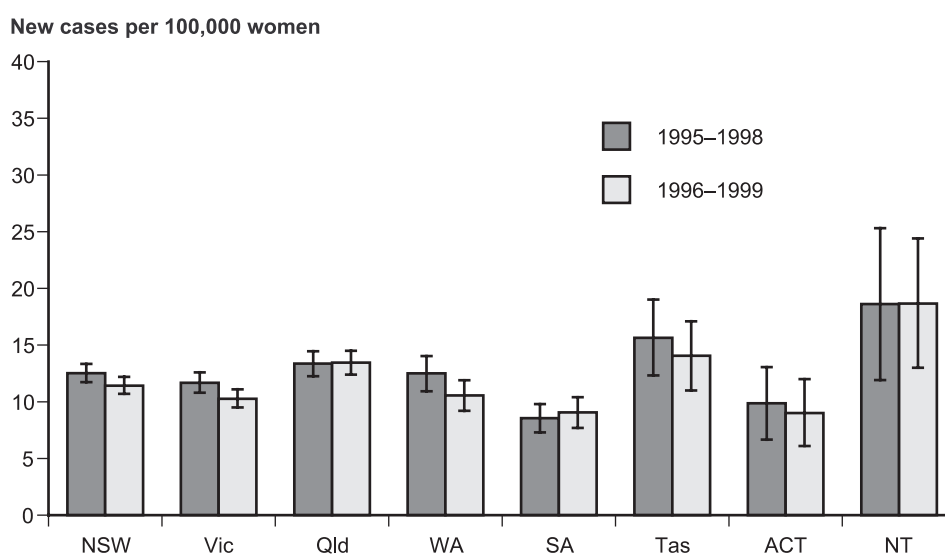
Note: Rates are expressed per 100,000 women.

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. 149 and 151).

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.

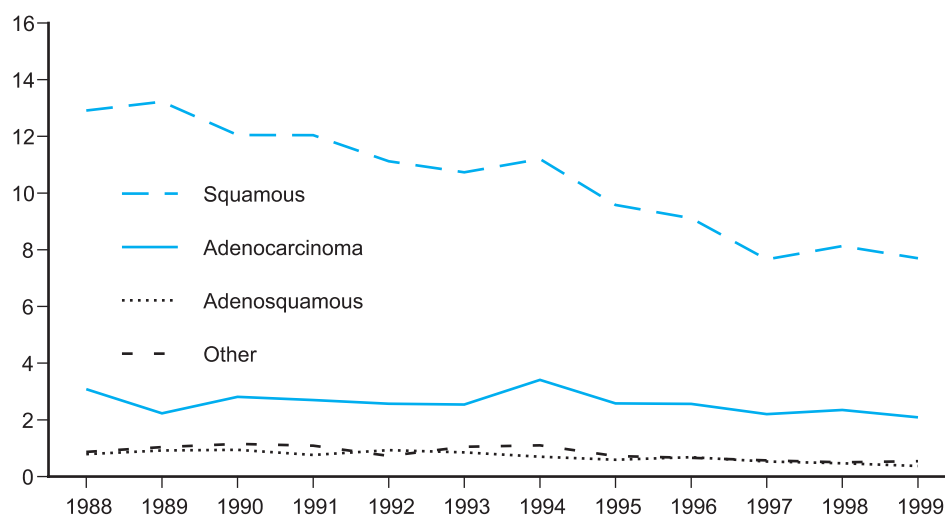
Source: National Cancer Statistics Clearing House (AIHW).

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 149 and 151).

New cases per 100,000 women



Refer to Table 16b (page 152).

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

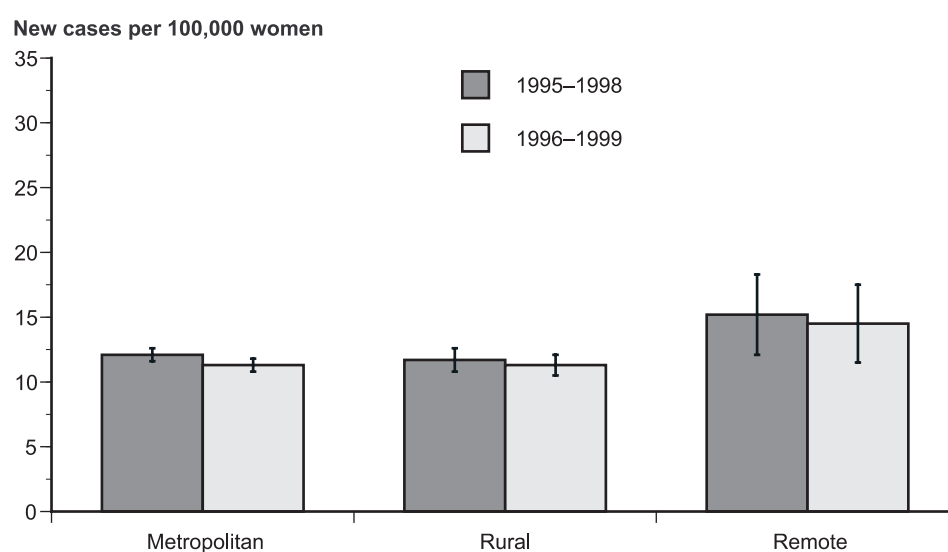
Histological type	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Squamous	12.9	13.2	12.1	12.0	11.1	10.7	11.2	9.6	9.1	7.7	8.1	7.7
Adenocarcinoma	3.1	2.2	2.8	2.7	2.6	2.5	3.4	2.6	2.6	2.2	2.4	2.1
Adeno-squamous	0.8	0.9	0.9	0.8	0.9	0.9	0.7	0.6	0.7	0.5	0.5	0.4
Other	0.9	1.0	1.2	1.1	0.7	1.1	1.1	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 152).

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 155).



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 154).
- 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 155).
- 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.