Cervical screening in Australia 1998–1999 is the third annual report based on key program activity, performance and outcome indicators to monitor the achievements of the National Cervical Screening Program. The report provides a comprehensive national picture of cervical screening in Australia for 1998–1999.

The report presents most recent information on participation in cervical screening, rate of early re-screening, low-grade and high-grade abnormalities detected, incidence of cervical cancer and mortality. Analysis of incidence and mortality data by location (rural, remote and metropolitan) as well as mortality by Indigenous status are also presented. Where possible, data are presented by State and Territory stratification.

This report will be relevant to anyone with an interest in women's health or cervical screening, including health planners and administrators, various health practitioners, academic researchers and the general public.

Cervical Screening in Australia 1998-1999

Cervical Screening in Australia 1998–1999

AIHW
National Cervical Screening Program

Cervical Screening in Australia 1998-1999

The Australian Institute of Health and Welfare is Australia's national health and welfare statistics and information agency. The Institute's mission is to improve the health and wellbeing of Australians by informing community discussion and decision making through national leadership in developing and providing health and welfare statistics and information.

Cancer Series
Number 16

Cervical screening in Australia 1998-1999

Australian Institute of Health and Welfare
and the
Commonwealth Department of Health and Ageing
for the
National Cervical Screening Program

Australian Institute of Health and Welfare
Canberra
AIHW cat. no. CAN 11

ISSN 1039-3307

ISBN 0 642 82088 0

Publication approval number: 3093

This publication is part of the Australian Institute of Health and Welfare's Cancer Series.

A complete list of the Institute's publications is available from the Media and Publishing Unit, Australian Institute of Health and Welfare, GPO Box 570, Canberra ACT 2601, or via the Institute's web site (http://www.aihw.gov.au).

Suggested citation

Australian Institute of Health and Welfare (AIHW) 2002. Cervical Screening in Australia 1998-1999. AIHW Cat No CAN 11. Canberra: AIHW (Cancer Series number 16).

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Acknowledgments

This report is funded by the Commonwealth Department of Health and Ageing. The assistance of the Cancer Screening Section in the Department is gratefully acknowledged.

The authors of this report are Dr Indrani Pieris-Caldwell, Dr Chris Stevenson and Mr John Harding from the Australian Institute of Health and Welfare. The authors wish to extend their gratitude to those persons working in the National Cervical Screening Program and members of the National Screening Information Advisory Group who provided data and comments for this report. The authors also acknowledge the input of the members of the National Advisory Committee to the National Cervical Screening Program, and the Australasian Association of Cancer Registries. Thanks are also extended to the New South Wales Cancer Council, and State and Territory health departments for their assistance in the production of this report. The support received from the staff at Health Registers and Cancer Monitoring Unit, Australian Institute of Health and Welfare, during the production of this report is gratefully acknowledged.

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Summary

- Between the two periods 1997-1998 and 1998-1999 cervical screening participation rates of the target population (women aged 20 to 69 years) increased from 63.9% to 64.8%.
- There was a small increase in the participation rate in most 5-year age groups within the target age group between the two periods 1997-1998 and 1998-1999. The largest increase - of 4.6% - was in the age group 60-64 years.
- Overall, 2,777,324 women were screened for cervical abnormalities in the 1998-1999 period. This is an increase of 55,674 women screened compared with the 2,721,650 women screened during 1997-1998 period.
- Compliance with the recommended screening interval (two years following a negative smear) is crucial in maintaining the effectiveness and the cost efficiency of the Program. Of a cohort of women screened in February 1998 who had a negative Pap smear result, 43.1% were rescreened in two years or less. This is in contrast to 46.7% women who were rescreened in two years or less following a negative Pap smear in 1997.
- Of the 1998 cohort of women who had a negative Pap smear result, 35% had one additional smear, 7% had two additional smears, and less than 2% had three or more additional smears in the two years following their initial Pap smear.
- 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 1999, the same as for 1998. The 1998 ratio does not include data for the Australian Capital Territory.
- In 1999, the National Cervical Screening Program detected 11,642 women with high-grade abnormalities compared with 10,704 women with high-grade abnormalities detected in 1998. This number was much higher in the younger age groups: in the 20-29 age group the rate of high-grade abnormalities was over 17 per 1,000 women screened whereas it was less than 2 per 1,000 in women aged 55 years and over.
- The number of new cases of cervical cancer declined in Australia in recent years. There were 868 new cases in Australia in 1998 compared with 1,086 new cases detected in 1987. Cervical cancer is one of the few cancers where screening can detect pre-cancerous lesions. Treatment can prevent a large proportion of these pre-cancerous lesions progressing to cancer.
- Cervical cancer is the 18th most common cause of cancer mortality in women, accounting for 220 deaths in 1999. The age-standardised mortality rate from cervical cancer declined in the target age group from 4.7 per 100,000 women to 2.0 per 100,000 women between the years 1990 and 1999. During the same period the age-standardised mortality rate for all ages also declined from 5.0 per 100,000 women to 2.5 per 100,000 women.
- Women in the target age group from remote locations experienced a relatively high mortality rate from cervical cancer (4.7 per 100,000 women); this compared with 2.4 deaths per 100,000 women for metropolitan and rural locations. However, between the periods 1996-1998 and 1997-1999, the age-standardised cervical cancer mortality rate declined in all locations (metropolitan, rural and remote).
- Only Western Australia, South Australia and the Northern Territory have Indigenous mortality registration data of sufficient quality to be publishable. For these jurisdictions, in the period from 1997-1999 there were 13 deaths (an age-standardised mortality rate of 15.8 per 100,000

women) from cervical cancer among Indigenous women in the target age group. This is over seven times the corresponding rate in non-Indigenous women (2.2 per 100,000 women). It does indicate a decline in mortality compared with the 1996-1998 mortality rate for Indigenous women in the target age group, which was 19.0 per 100,000 women. 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, that is, it is not statistically significant.

National Cervical Screening Program

The National Cervical Screening Program continues to be a vibrant component of women's health in Australia. Cervical screening has been available in Australia for more than 35 years. Many women have grown up with the Program and regard a regular Pap smear as an integral aspect of their personal health care. This year we are able to show that, among women aged 20-69 years, the mortality rate from cervical cancer had declined by over 55% between 1989 and 1999. This is a remarkable achievement for any cancer over such a short time period. This achievement stands as a testimony to the commitment of women, health providers and government to the Program.

The National Advisory Committee continues to meet twice per year, with many of its members also contributing to the Working Groups. A new Working Group, the Aboriginal and Torres Strait Islander Women's Forum, was established during 2000. The incidence and mortality from cervical cancer among Aboriginal and Torres Strait Islander women continues to be unacceptably high. The Forum will allow for a more concentrated effort to reduce this burden to be made at the national level. The Chair of the Forum is Ms Patricia Kurnoth.

The other four Working Groups continue.

The Education, Communication and Recruitment Working Group is developing national resources for women and health practitioners about early rescreening. These resources will include information on underscreening. Although early rescreening is a problem in many countries, Australia is one of the first countries to tackle the issue formally. Thus our achievements in this area could have both national and international benefit. This Working Group is chaired by Ms Sue Gilchrist.

The New Technologies Working Group maintains a watching brief on research, both within Australia and internationally, into new approaches to preventing cervical cancer. Given the large policy implications of adopting new technologies, high-quality evidence will be needed before changes are made. Mr Robert Rome is the Chair.

The Policy and Cost-Effectiveness Working Group is now well advanced in reviewing the screening policy. Particular emphasis is being given to the age range and the recommended rescreening interval. A review of the National Health and Medical Research Council's 'Guidelines for the Management of Women with Screen Detected Abnormalities' is planned to begin later this year. The Chair of the Working Group is Ms Jennifer Muller.

The Quality Assurance Working Group, chaired by Dr Annabelle Farnsworth, continues work on the Performance Standards for Laboratories Reporting Cervical Cytology. Compliance with the Standards has been mandatory for laboratory accreditation since 1 July 1999. Survey instruments have been completed for a study of the quality of reporting of cervical histopathology by Australian laboratories. This study will complement our understanding of pathology laboratory services for the cervical health of women.

This third annual report of key performance indicators for the National Cervical Screening Program is particularly welcomed. The Report's usefulness to the Program and its accountability to the community, to health professionals and to Government make it a valued publication.

Dr Heather Mitchell
Chair
National Advisory Committee to the
National Cervical Screening Program

Cervical screening

The National Cervical Screening Program in Australia

In 1986 the World Health Organization and the International Agency for Research on Cancer published guidelines outlining the essential features of cervical screening programs. These guidelines were subsequently used as the basis for a review of existing cervical screening in Australia. Between 1988 and 1990, a Program evaluation was undertaken by the Cervical Screening Evaluation Steering Committee at the then Australian Institute of Health on behalf of the Australian Health Ministers' Advisory Council (AHMAC).

In its report to AHMAC, the Committee recommended the introduction of an organised approach to cervical screening, including the establishment of State and Territory registries to provide the infrastructure for this process. A major recommendation was that registries should:

- remind women to attend for screening;
- provide a fail-safe system to ensure the follow-up of women with significantly abnormal Pap smears;
- provide individual women's cervical screening histories to laboratories and clinicians to aid reporting and management; and
- monitor the effects of initiatives to improve participation by women in screening (AHMAC 1991).

The current Australian policy is for all women who have been sexually active at any stage in their lives to have a Pap smear every two years until age 70 years. Pap smears may cease at the age of 70 years for women who have had two normal Pap smears within the last five years. Women over 70 years who have never had a Pap smear, or who request a Pap smear, should be screened.

The Program seeks to reduce morbidity and mortality from cervical cancer by:

- maximising participation by eligible women in routine 2-yearly screening;
- encouraging practitioners to collect cervical smears containing adequate samples of cervical cells;
- instituting a uniform and reliable reporting system;
- developing appropriate evaluation and management protocols for women with screen-detected abnormalities; and
- promoting effective treatment and follow-up for women with screen-detected abnormalities of significant malignant potential (DHSH 1994a).

Recruitment

State and Territory Programs actively recruit women in the target screening age group 20-69 years by a range of strategies including health promotion activities and direct mailouts based on local electoral rolls. Other mechanisms include providing reminder services for women who do not otherwise attend for rescreening, and providing a back-up service encouraging women with significantly abnormal smears to be followed up. This work is facilitated by State- and Territory-based cervical cytology registries.

Cervical cytology registers

Cervical cytology registers operate in all States and Territories, and maintain information about women and their screening history on a confidential basis. In all jurisdictions, cervical cytology registers are covered by State and Territory legislation. Registration on cervical cytology registers is voluntary, and women may opt not to be included. Doctors or health workers are required to advise women about information sent to the cervical cytology registers.

If the woman does not object, her demographic details, together with a summary of the smear report, are forwarded by the pathology laboratory to the cervical cytology register located in the State or Territory. If a woman has chosen to opt for non-inclusion, her data are still included on the register in some States for statistical purposes but are unidentified, and by definition no follow-up is possible. It is estimated that 1-3% of women choose not to be included on the register.

Table 1: State and Territory registry commencement dates

State or Territory	Commencement date
New South Wales Pap Test Register	July 1996
Victorian Cervical Cytology Registry	November 1989
Queensland Health Pap Smear Register	February 1999
Cervical Cytology Registry of Western Australia	July 1992
South Australian Cervix Screening Program	June 1993
Tasmanian Cervical Cytology Register	May 1994
Australian Capital Territory Cervical Cytology Register	March 1995
Northern Territory Pap Smear Register	March 1996

Reminders

If the cytology report shows no abnormal cells (that is, a negative smear), the national screening policy recommends a repeat smear in two years. A reminder notice is sent to women if they have not attended for screening for more than two years; however, the time at which the reminder notice from the cervical cytology register is dispatched varies from 27 to 36 months across the States and Territories. If a woman's Pap smear is abnormal, the registries observe follow-up protocols involving letters to doctors and to women to try to ensure that women with abnormalities are being appropriately followed up.

National cervical screening monitoring indicators

This report focuses on monitoring the performance of the National Cervical Screening Program. Indicators are used as summary measures of program activity, performance and outcome. Indicators such as those described below help measure changes in disease patterns and examine the contribution that health interventions might have in preventing or reducing mortality. While indicators can be used in the evaluation of screening or other health interventions, they typically relate to the effect of the intervention at a broad level. Indicators are generally not designed to focus on processes or particularly detailed operations.

Screening indicators for the National Cervical Screening Program cover the areas of participation, early rescreening, detection of low- and high-grade abnormalities, incidence, and mortality. These indicators have been recommended by the National Screening Information Advisory Group, and endorsed by the National Advisory Committee and State and Territory cervical screening programs. Indicators are reviewed annually. No changes have been made to the existing indicators for reporting in 1998-99.

An overview of each indicator's intention, application and definition is given in the following pages. The overview is supported with data showing the current status and trend of the indicator. Additional information has been provided as background material to interpret the indicators, and to assist those not familiar with this area of population health.

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).

Indicator 2: Early rescreening

Proportion of women rescreened by number of rescreens during a 24-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 cervical cancer

Incidence rates of micro-invasive 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 6: Incidence of 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).

Indicator 7: Mortality

Mortality 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).

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 one 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 three years.

Periodic incidence and mortality indicators by location

Indicator 8: Incidence by location

Incidence rates of cervical cancer per 100,000 estimated resident female population in a 3-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).

Indicator 9: Mortality by location

Mortality rate from cervical cancer per 100,000 estimated resident female population in a 3-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).

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 & DHSH 1994). Concordance algorithms have been developed to convert statistical local area information coded according to earlier and later ASGC versions into rural, remote and metropolitan area groupings.

Table 2: 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 & DHSH 1994.

Indicator 10: Indigenous mortality

Mortality rates from cervical cancer per 100,000 estimated resident female population in a 3-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 and the Northern Territory are currently considered to have adequate coverage of Indigenous mortality in the registration of deaths. Therefore, mortality data from these States and Territory only are analysed in this report.

Confidence intervals

Where indicators include a comparison between States and Territories, between time periods, between geographic location 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 represents a range over which variation in the observed rate is consistent with this chance variation. These confidence intervals can be used as an approximate test of whether changes in a particular rate are consistent with chance variation. Where the confidence intervals do not overlap, the change in a rate is greater than that which could be explained by chance. Where the intervals overlap, changes in the rate may be taken as approximately consistent with variability due to chance.

For example, the participation rate for Victoria in 1997-1998 was 67.8% with a confidence interval of 67.7% to 68.0%. The corresponding rate for 1998-1999 was 68.9% with a confidence interval of 68.8% to 69.0%. These two intervals do not overlap, so the difference between the 1997-1998 and 1998-1999 rates is larger than would be expected 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 1997-1999 there were 2.4 cervical cancer deaths per 100,000 women living in rural areas. This rate had a confidence interval of 2.0 to 2.9. The corresponding rate for women in remote areas was 4.7 per 100,000 women, with a confidence interval of 2.8 to 7.0. These confidence intervals overlap and so, despite the relatively large difference between the two observed rates, they are still consistent with chance variation. 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. This in turn leads to relatively wide confidence intervals for an observed mortality 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 that is too small to allow us 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 mortality from cervical cancer by detecting treatable pre-cancerous abnormalities before a progression to cancer. Through increased participation, more women with pre-cancerous abnormalities can be detected and treated before progression to cervical cancer occurs, thus reducing morbidity to women. Also, increased participation will lead to the detection of more women with early stages of cancer where treatment can reduce mortality.

Through a variety of recruitment initiatives, the Program 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 two years. Pap smears may cease at the age of 70 years for women who have had two normal Pap smears within the last five years. Women over 70 years who have never had a Pap smear, or who request a Pap smear, should be screened.

Some women in the target population are unlikely to require screening, such as:

- 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).

In principle, the denominator and numerator should be adjusted to remove all of the above three groups from the data on participation. However, in practice, the data are adjusted to remove women who have had a hysterectomy but the latter two groups cannot be adjusted for, due to methodological difficulties.

State and Territory Programs have strategic plans in place to increase women's participation 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 National Cervical Screening Program and the current screening policy of a 2-yearly interval;
- this indicator is important in assessing the contribution of the National Cervical Screening Program to changes in incidence and mortality. The indicator can also be used as a means of evaluating recruitment practices, particularly if participation rates are analysed by demographic characteristics; and
- when this indicator is used in conjunction with others, it can be used to support debate relating to target groups and screening intervals.

The data presented for this indicator refer to the 2-year period 1998-1999. Data for the period 1997-1998 are included for comparison.

State- and Territory-specific issues

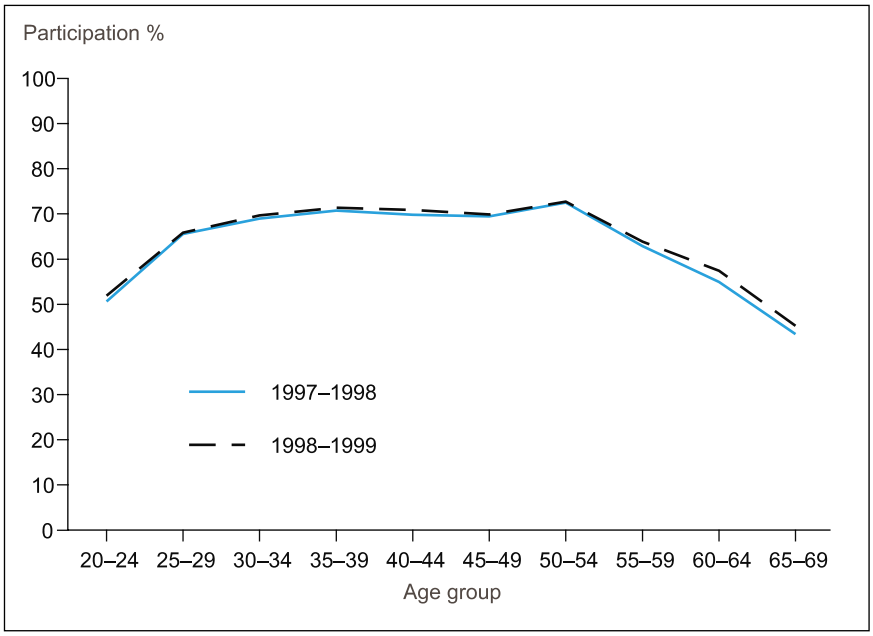
The Queensland Health Pap Smear Register began its operation in February 1999. Therefore participation data are not available for this jurisdiction. The overall rate for Australia for this indicator has been calculated excluding the Queensland population for the respective years.

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 overestimation of the numbers of women screened because of double counting of some women between States and Territories. This may be the result of difficulty in identifying State or Territory of residence for women in border areas and the inclusion of women resident overseas.

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 43 and 45).



Notes

1. Participation rates have been adjusted for the estimated proportion of women who have had a hysterectomy.
2. The Queensland Health Pap Smear Register commenced February 1999, therefore no data are available for this report.

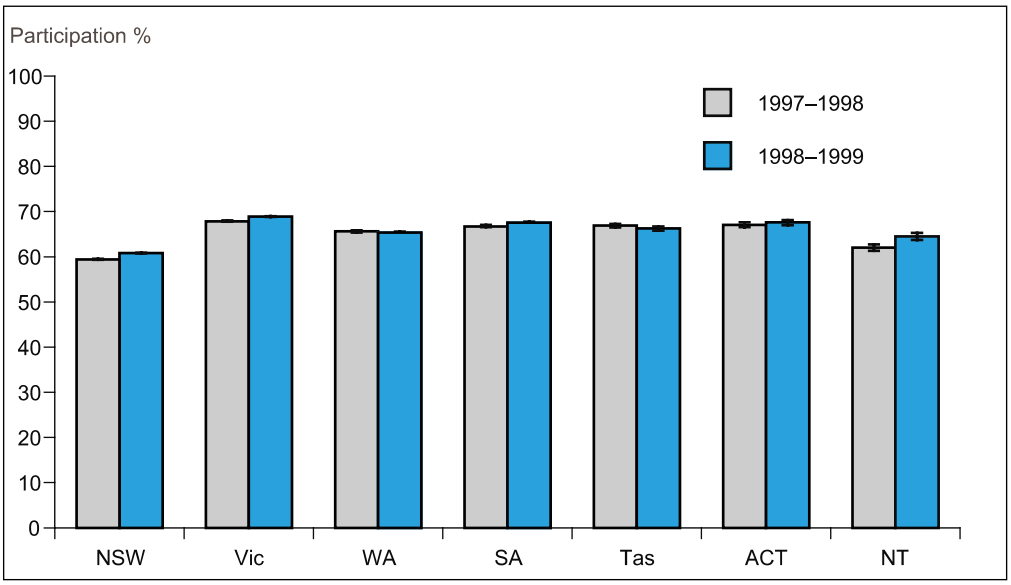
Source: AIHW analysis of State and Territory Cervical Cytology Registry data.

Figure 1: Participation rates in the National Cervical Screening Program by age group, Australia, 1997-1998 and 1998-1999

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	20-69
	(Per cent)										
1997-1998	50.6	65.5	69.0	70.7	69.8	69.4	72.5	62.9	54.9	43.4	63.9
1998-1999	52.0	66.0	69.7	71.4	70.9	69.9	72.8	63.9	57.4	45.2	64.8

- The age-standardised (AS) participation rate for cervical screening (excluding Queensland) for the period January 1998 to December 1999 was 64.8% for the target population of women aged 20-69 years (Table 2b, page 45).
- During this period 2,777,324 women were screened in Australia for pre-cancerous changes to cervical cells. Of these 2,716,364 (97.8%) were in the target age group 20-69 years of age (Table 2a, page 44).

- There was considerable variation in the rate of participation of different age groups within the target age group, ranging from a peak of 73% participation in the 50-54 years age group to a low of 45% in the 65-69 years age group (Table 2b, page 45).
- There was a small increase in the participation rate in most 5-year age groups within the target age group between the two periods 1997-1998 and 1998-1999. This resulted in 62,860 more women in the target age group being screened in 1998-1999. During the same period, participation of women in the 60-64 years age group had the largest increase of approximately 4.6% (Tables 1a to 2b, pages 42-45).



Notes

1. The Queensland Health Pap Smear Register commenced February 1999, therefore no data are available for this report.
2. Rates are expressed as the percentage of the eligible female population and age standardised to the Australian 1991 population.
3. 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, by States and Territories, 1997-1998 and 1998-1999

2-year period/ rate	NSW	Vic	WA[(a)]	SA	Tas	ACT[(a)]	NT	Australia
1997-1998								
AS rate	59.4	67.8	65.7	66.7	66.9	67.0	62.0	63.9
CI	59.3-59.5	67.7-68.0	65.4-65.9	66.5-67.0	66.5-67.3	66.5-67.6	61.3-62.7	63.8-63.9
1998-1999								
AS rate	60.8	68.9	65.4	67.6	66.3	67.6	64.5	64.8
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 include women with a valid WA or ACT address respectively.

- The registers in New South Wales, South Australia, Tasmania and Northern Territory record Pap smears for a small number of women who live outside the State or Territory. Of these, South Australia had the highest proportion of registrations for interstate residents in 1998-1999 (1.0% of all Pap smears).
- In 1998-1999 there was considerable variation in the participation rates between States and Territories for women in the target age group 20-69 years, ranging from a high of 68.9% in Victoria to a low of 60.8% in New South Wales (Table 2b, page 45).
- The participation rate in all States and Territories except Western Australia and Tasmania increased between the two periods 1997-1998 and 1998-1999. The Northern Territory registered the largest percentage increase between the two periods (4.0%). Apart from the Australian Capital Territory, the increase in participation in these jurisdictions was greater than would have been expected by chance (Tables 1b and 2b, pages 43 and 45).

Early rescreening

The National Cervical Screening Program seeks to maximise reductions in incidence of and mortality from cervical cancer. The design of the 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 coverage of the population. For most women who have a negative smear, the recommended interval until their next Pap smear is two years.

This indicator:

- tracks over a period of 24 months a cohort of women from all States and Territories, except Queensland, who had a negative smear result in February 1998, to determine the extent of early rescreening within the Program. February was selected as the index month 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, possibly because fewer women take holidays at this time; and
- measures the compliance with the recommended screening interval following a negative smear, and the range of screening practices around it.

The indicator is important in assessing screening coverage around the recommended interval, as significant differences may reduce the Program's effectiveness.

The results presented here are based on data for the 2-year period from February 1998. For comparison, data from February 1997 are also presented.

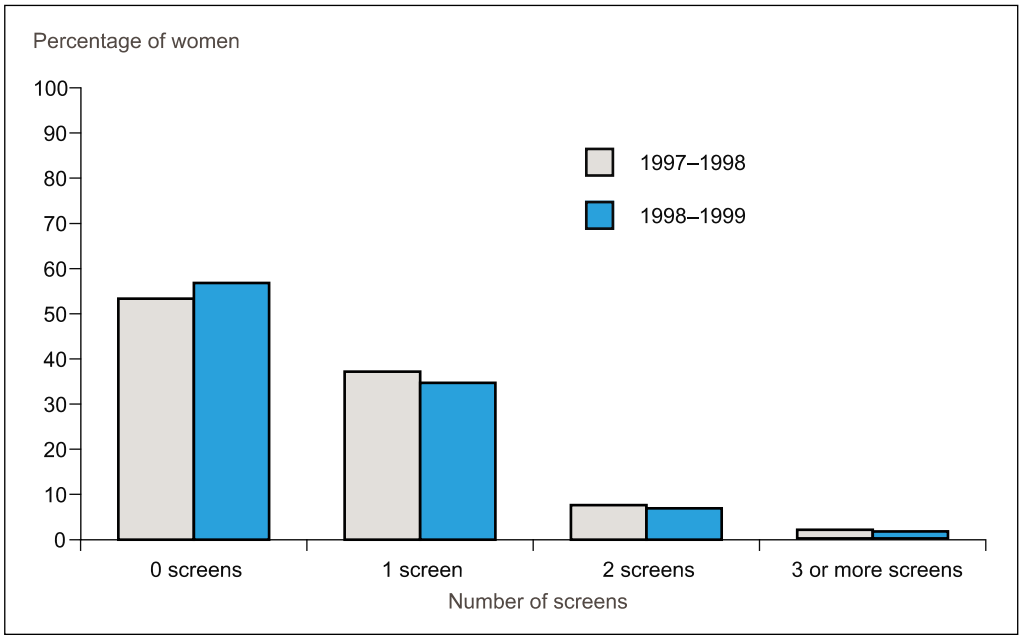
This indicator should be interpreted with caution as:

- women attending for a 2-year rescreen will do so at a time convenient to them. Often this can be combined with a visit to a general practitioner in the period immediately before the 2-year anniversary. Some prescriptions for oral contraceptives will lapse at 22 months and often the appointment for a new script is combined with a Pap smear; and
- some early rescreening after a negative Pap smear report is appropriate and in accordance with the guidelines of the National Health and Medical Research Council (NHMRC). Specifically, if a woman has a history of histologically proven high-grade abnormality, 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-month interval.

In light of these points, this indicator is currently under review and may change in future.

Indicator 2: Early rescreening

Proportion of women rescreened by number of rescreens during a 24-month period following a negative smear.



Refer to Table 4 (page 46).

Notes

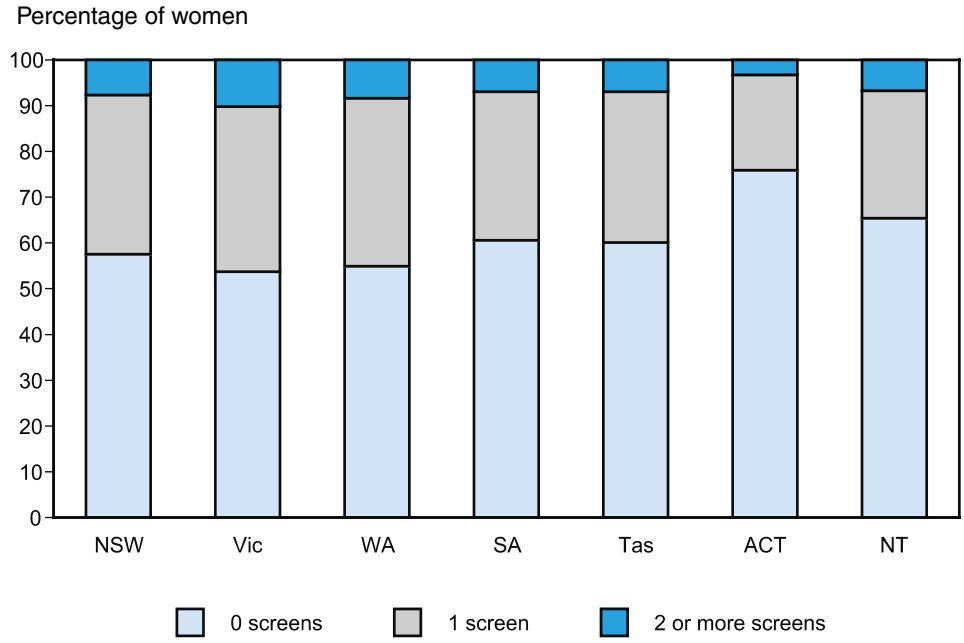
1. The reference period for this indicator was the 24 months following February 1998.
2. The Queensland Health Pap Smear Register commenced February 1999, therefore no data are available for this report.

Source: AIHW analysis of State and Territory Cervical Cytology Registry data.

Figure 3: Proportion of women rescreened by number of screens during the 24-month period following a negative smear in February 1997 and 1998, Australia

2-year period	0 screens	1 screen	2 screens	3+ screens
		(Per cent)		
1997-1998	53.3	37.2	7.6	1.9
1998-1999	56.8	34.7	6.9	1.5

- In this indicator, a cohort of 138,490 women from all States and Territories, except Queensland, who had a negative smear result in February 1998, was tracked over a period of 24 months (Table 3, page 46).
- Approximately 57% of women who had a Pap smear in February 1998 were not rescreened in the following two years. However, 35% of all screened women had one additional smear, 7% had two additional smears, and less than 2% had three or more additional smears (Table 4, page 46).
- Overall, the percentage of women who did not have any additional smears following a negative smear increased by 6.6% between the 1997 (53.3%) and 1998 (56.8%) cohorts. The percentage of women who had one additional smear declined by 6.7%; for two additional smears the reduction was 9.2%. The percentage of women who had three or more smears declined by 21.0% (Table 4, page 46).



Refer to Table 4 (page 46).

Notes

1. The reference period for this indicator was the 24 months following February 1998.
2. The Queensland Health Pap Smear Register commenced February 1999, therefore no data are available for this report.

Source: AIHW analysis of State and Territory Cervical Cytology Registry data.

Figure 4: Proportion of women rescreened by number of screens during the 24-month period following a negative smear in February 1998, by States and Territories

No. of screens	NSW	Vic	WA	SA	Tas	ACT	NT	Australia
				(Per cent)				
0 screens	57.5	53.7	54.9	60.6	60.1	75.9	65.4	56.8
1 screen	34.8	36.0	36.7	32.5	32.9	20.8	27.8	34.7
2 or more	7.7	10.3	8.4	7.0	7.0	3.4	6.8	8.4

- More than 60% of women from South Australia, Tasmania, the Australian Capital Territory and the Northern Territory, who had a negative screen in February 1998, had no further screens in the following 24 months (Table 4, page 46).
- There was some variation in the proportion of early rescreens by State and Territory. The percentage of women who had one repeat smear ranged from 20.8% (Australian Capital Territory) to 36.7% (Western Australia). The proportion of women who had two or more repeat screens varied between States and Territories, from 3.4% in the Australian Capital Territory to 10.3% in Victoria (Table 4, page 46).

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. However, once they are identified on biopsy the option of active treatment is available.

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; or
- 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.

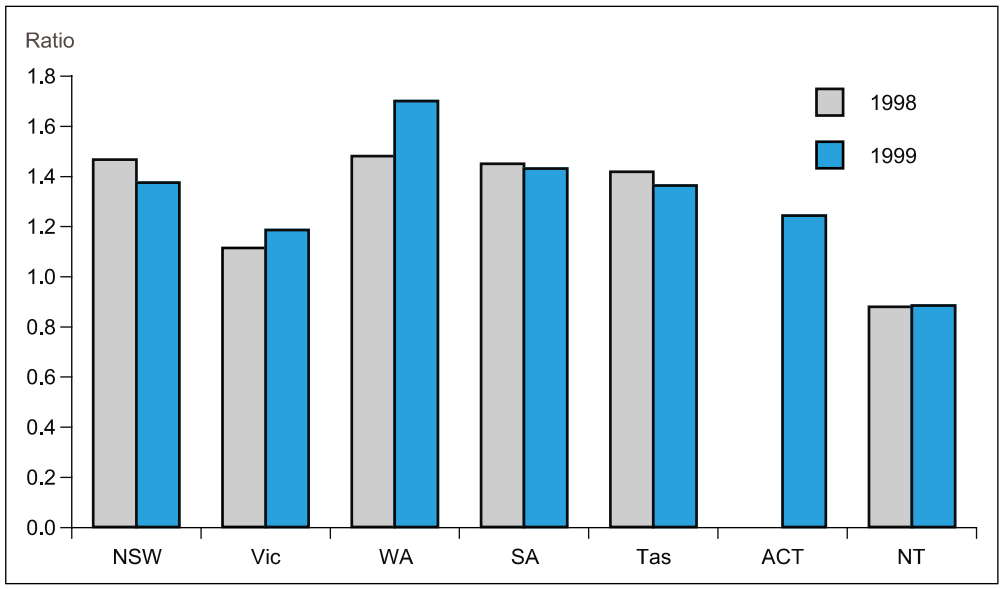
The purpose of screening is to reduce morbidity by identifying pre-cancerous abnormalities. Effective treatment of these abnormalities prevents invasive cancer and hence avoids the morbidity associated with cancer treatment.

The rationale behind this indicator is to provide a broad indication of the extent to which screening exposes women taking part in the Program to the risk of adverse outcomes without an associated health benefit.

A biopsy is a relatively invasive procedure in which a piece of tissue is taken from the cervix, and represents an increased risk of morbidity for a woman compared with having a Pap smear. This indicator provides data about the number of women who have a biopsy that finds only a low-grade abnormality with a low risk of progression to invasive cancer, and compares it with the number of women who have a high-grade abnormality.

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 (page 47).

Notes

1. The ACT did not collect histology details during 1998.
2. The Queensland Health Pap Smear Register commenced February 1999, therefore no data are available for this report.

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, by States and Territories, 1998 and 1999

Year	NSW	Vic	WA	SA	Tas	ACT	NT	Australia
				(Ratio)				
1998	1.5	1.1	1.5	1.5	1.4	n.a.	0.9	1.4
1999	1.4	1.2	1.7	1.4	1.4	1.2	0.9	1.4

- The ratio of histologically confirmed low-grade abnormalities to high-grade abnormalities was 1.4 for Australia in 1999, the same as in 1998. Note that the 1998 ratio does not include data for the Australian Capital Territory (Tables 5a and 5b, page 47).
- In 1999 there was some variation among States and Territories, with the highest ratios in Western Australia (1.7), followed by South Australia, New South Wales and Tasmania (1.4), while the Northern Territory (0.9) had the lowest ratio (Table 5b, page 47).
- Between 1998 and 1999, there were small shifts in the ratio of low-grade intraepithelial abnormalities to high-grade intraepithelial abnormalities detected within States and the Northern Territory. The ratios in New South Wales and South Australia declined, while there was a small increase in the ratio in Victoria and Western Australia (Tables 5a and 5b, page 47).

High-grade abnormalities

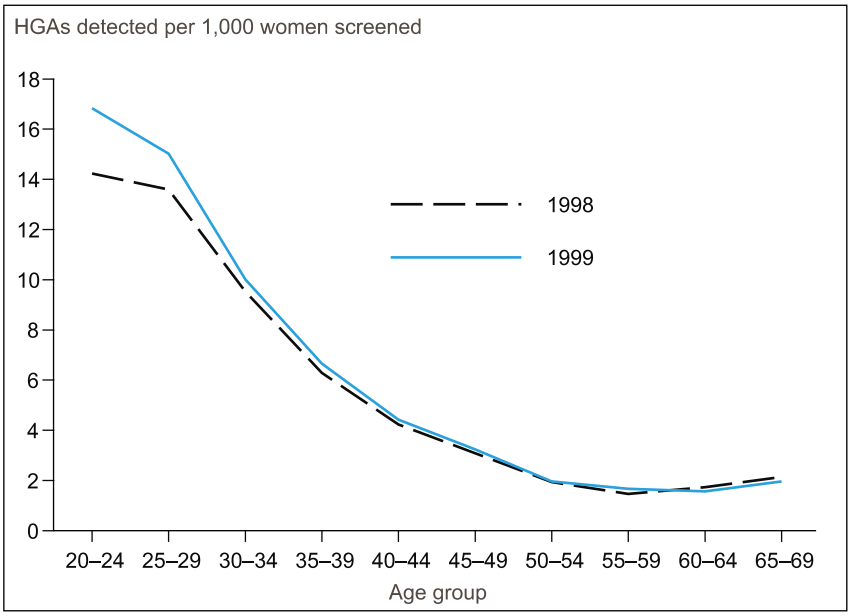
High-grade abnormalities have a greater probability of progressing to invasive cancer than low-grade abnormalities. Therefore, one of the aims of the National Cervical Screening Program is to set a screening interval which detects most of these abnormalities before they progress and become invasive. 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 NHMRC has produced guidelines to assist in the management of women who have low- and high-grade intraepithelial abnormalities (DHSH 1994b).

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 48 and 49).



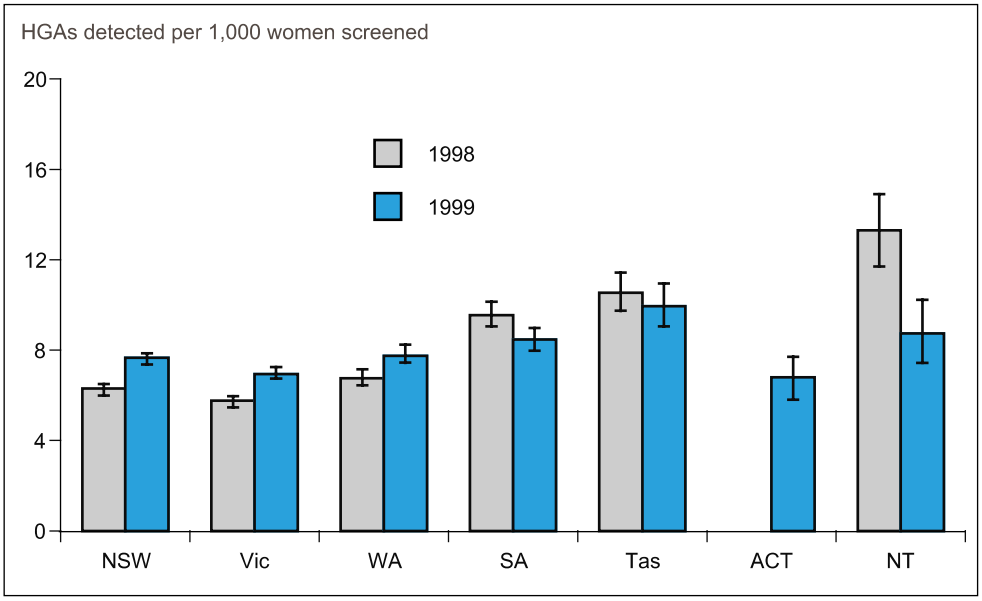
Note: The Queensland Health Pap Smear Register began in February 1999; therefore no data are available for this report.

Source: AIHW analysis of State and Territory Cervical Cytology Registry data.

Figure 6: High-grade abnormalities per 1,000 women by age group, Australia, 1998 and 1999

	Age group										
Age	**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)										
1998	14.3	13.9	8.8	6.3	4.1	2.6	1.9	1.6	1.7	1.0	6.7
1999	16.8	15.0	10.0	6.7	4.4	3.2	2.0	1.7	1.6	2.0	7.6

- The age-standardised detection rate for histologically verified high-grade intraepithelial abnormalities increased from 6.7 per 1,000 women screened in the target age group 20-69 years in 1998 to 7.6 per 1,000 women screened in 1999 (Tables 9a and 9b, page 54).
- In 1999, of the 1,582,012 women screened in the target age group 20-69 years in Australia, 11,686 (0.7%) histologically verified high-grade abnormalities were detected (Tables 7b and 8b, pages 51 and 53).
- The rate of histologically verified high-grade intraepithelial abnormalities was much higher in the younger age groups (Figure 6). In 1999, the rate in the 20-24 year age group was 16.8 per 1,000 women screened compared with 2 or less per 1,000 women in the age groups from 50-54 to 65-69. This age-specific distribution contrasts with patterns of cervical cancer incidence and mortality that are the inverse of this age distribution. This suggests that the malignant potential of an intraepithelial high-grade abnormality is greater with increasing age.



Refer to Tables 9a and 9b (page 54).

Notes

1. The Queensland Health Pap Smear Register began in February 1999; therefore no data are available for this report.
2. The ACT did not collect histology data during 1998.
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, by States and Territories, 1998 and 1999

	NSW	Vic	WA	SA	Tas	ACT	NT	Australia
AS rate 1998	6.3	5.8	6.7	9.5	10.5	n.a.	13.3	6.7
95% CI	6.1-6.5	5.5-6.0	6.4-7.1	9.0-10.1	9.7-11.4	n.a.	11.7-14.9	6.6-6.9
AS rate 1999	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

- In 1998 and 1999 there was considerable variation in the State and Territory age-standardised rate of high-grade abnormalities per 1,000 women screened. In 1999, Tasmania had the highest rate at 9.9 per 1,000 women screened, and the Australian Capital Territory the lowest at 6.8 per 1,000 women in the target age group 20-69 years (Tables 9a and 9b, page 54).
- The age-standardised rate of high-grade abnormalities per 1,000 women increased in New South Wales (from 6.3 to 7.7), Victoria (from 5.8 to 6.9) and Western Australia (6.7 to 7.7) between 1998 and 1999. The increase in all three jurisdictions was statistically significant.
- A statistically significant decline in the age-standardised rate of high-grade abnormalities per 1,000 women was observed in the Northern Territory (from 13.3 to 8.7) between 1998 and 1999. During the same period, South Australia and Tasmania also showed a decrease; however, the decline was not statistically significant (Tables 9a and 9b, page 54).

Incidence

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

There are several forms of cervical cancer. The greatest proportion of cervical cancers are squamous cell carcinomas. Squamous cell carcinoma of the cervix is preceded, over a period of years, mostly by a spectrum of asymptomatic abnormalities. CIN usually occurs at least a decade before cervical cancer. If CIN remains untreated, some women will develop cervical cancer.

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).

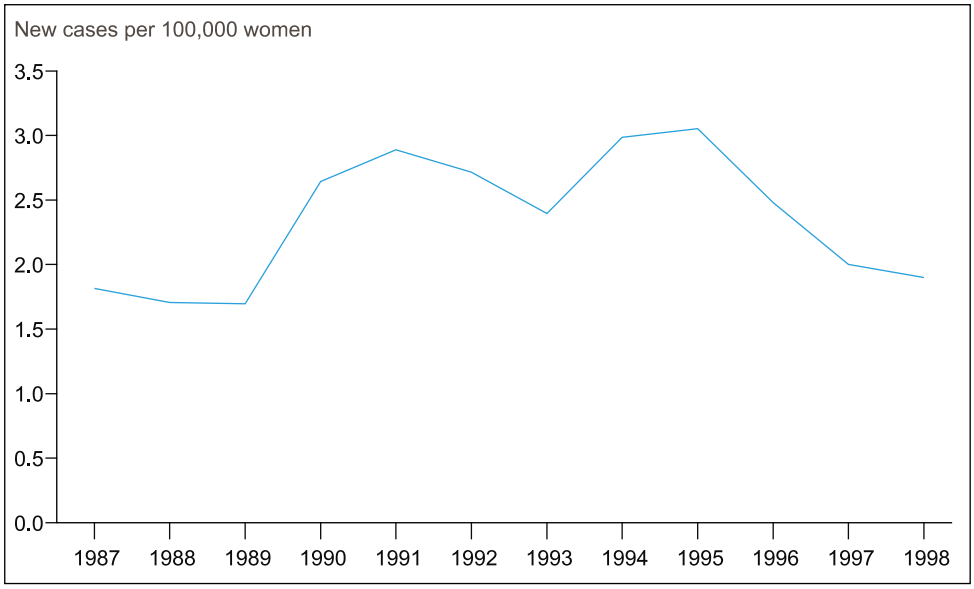
Micro-invasive squamous cell carcinoma is the most common form of micro-invasive cancer, and is reported in Indicator 5. There are also other forms of micro-invasive cancer for which data are not available.

Looking at cervical cancer overall, there has been a considerable reduction in the incidence (35%) since 1987. 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. For this report, the most recent national data available on incidence are for 1998, in contrast to screening data, which are available for 1999. This time lag in availability of incidence data is expected to reduce over the next few years as State and Territory cancer registries implement strategies to reduce data-processing backlogs.

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 56).



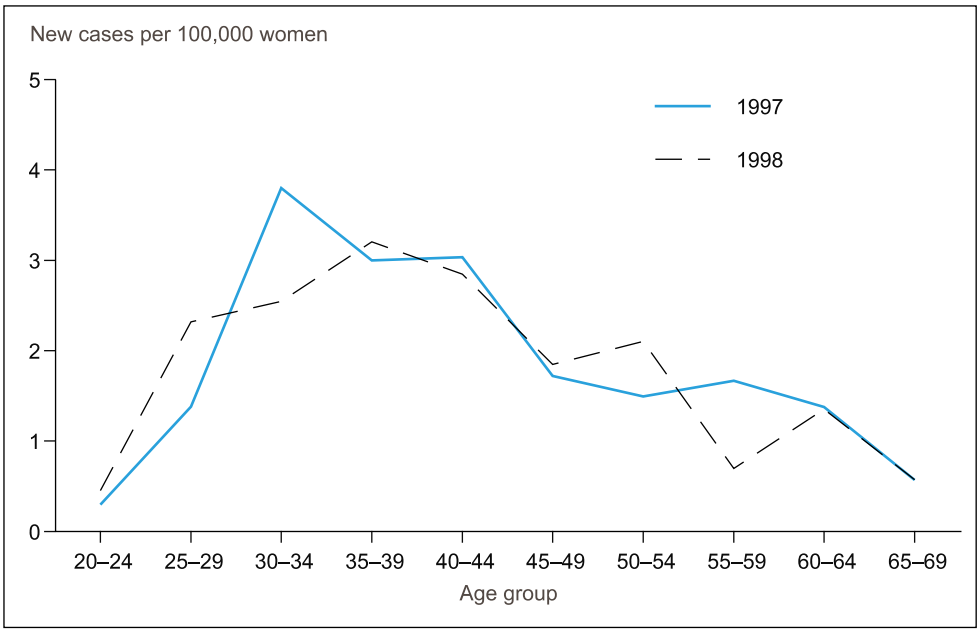
Note: Rates are expressed per 100,000 women and age standardised to the Australian 1991 population.

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, 1987-1998

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	(Number per 100,000 women)											
AS rate	1.8	1.7	1.7	2.6	2.9	2.7	2.4	3.0	3.1	2.5	2.0	1.9

- The age-standardised incidence rate of micro-invasive cervical cancer was 1.8 per 100,000 women for all women in 1998, and 1.9 per 100,000 for the target age group 20-69 years (Table 11, page 56).
- In 1998 there were 122 new cases of micro-invasive cervical cancer among women of all ages, and for the target age group 20-69 years there were 116 new cases (Table 10, page 55).
- The age-standardised incidence rates for micro-invasive squamous cell carcinoma of the cervix have fluctuated during the period 1987-1998. Note that the number of cases of micro-invasive cancer is very low and the rates are therefore unstable (Table 11, page 56).



Note: Rates are expressed per 100,000 women.

Source: National Cancer Statistics Clearing House (AIHW).

Figure 9: Age-specific incidence rates of micro-invasive squamous cell cancer, women aged 20-69 years, Australia, 1997 and 1998

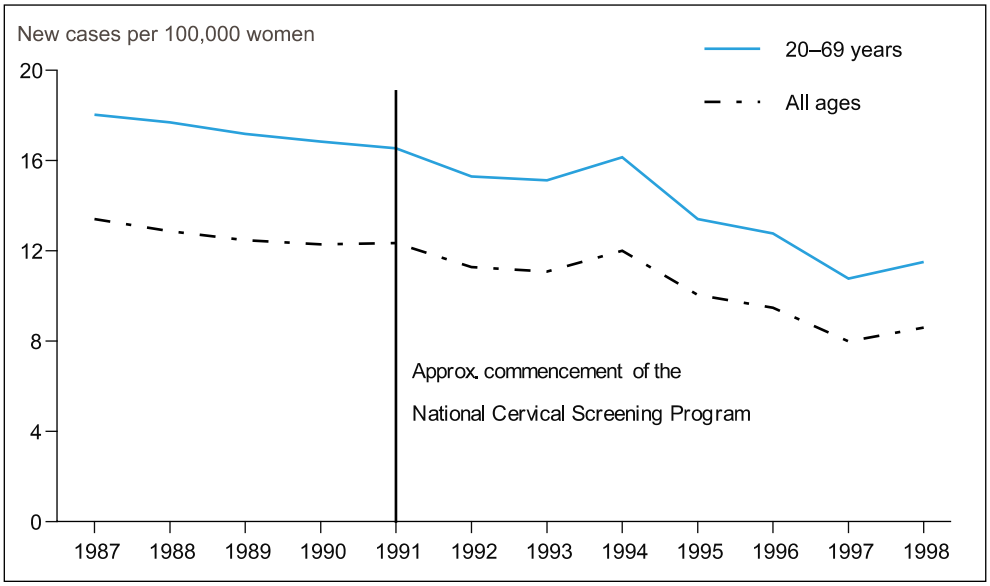
	Age group									
Year	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69
1997	0.3	1.4	3.8	3.0	3.0	1.7	1.5	1.7	1.4	0.6
1998	0.5	2.3	2.5	3.2	2.8	1.8	2.1	0.7	1.4	0.6

- In 1998, women in the age group 35-39 years had the highest incidence rate of micro-invasive squamous cell cancer at 3.2 per 100,000 women, whereas in 1997 women in the 30-34 year age group had the highest incidence. The rate showed a steady decline with age from the 45-49 year age group, reaching a low of 0.6 per 100,000 for the 65-69 age group. It should be noted that the rates for age groups 50-54 and over are based on small numbers of cases (less than 10 cases in each 5-year age group) (Tables 10 and 11, pages 55 and 56).
- In 1998, there were 24 cases of micro-invasive squamous cell cervical cancer in women aged 35-39 years. The number of micro-invasive squamous cell cervical cancers declined in most age groups, apart from the age groups 25-29 years and 50-54 years. Once again, it should be noted that the number of cancers in each age group is small. The number of cancers occurring among women in each age group 55-59 years and over is less than 10 (Table 10, page 55).

Indicator 6: Incidence of 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 58).



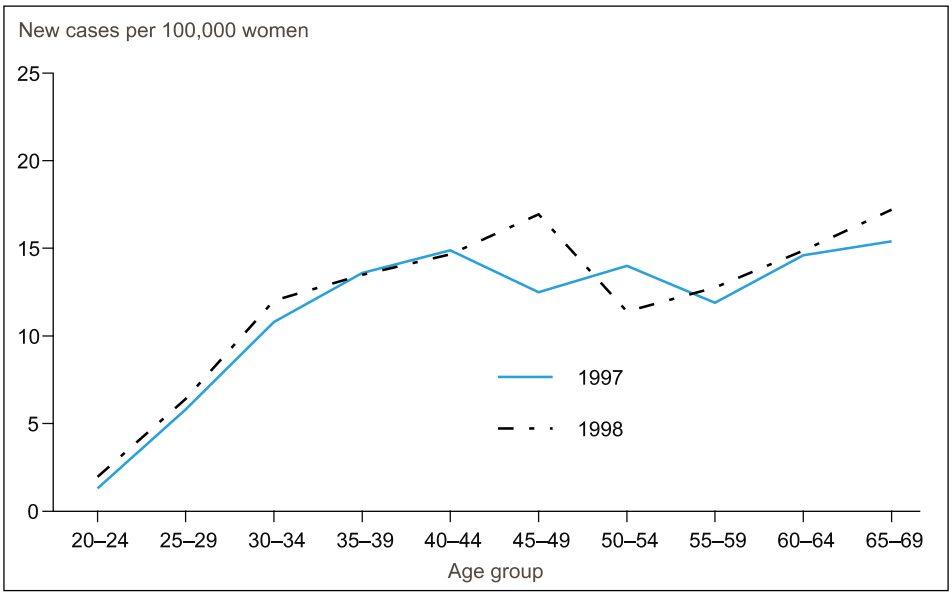
Note: Rates are expressed per 100,000 women and age standardised to the Australian 1991 population.

Source: National Cancer Statistics Clearing House (AIHW).

Figure 10: Age-standardised incidence rates of cervical cancer, Australia, 1987-1998

Age	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	(Number per 100,000 women)											
All ages	13.4	12.9	12.5	12.3	12.3	11.3	11.1	12.0	10.0	9.5	8.0	8.6
20-69 years	18.0	17.7	17.2	16.8	16.5	15.3	15.1	16.1	13.3	12.8	10.8	11.5

- In 1998, the incidence rate of all cervical cancers declined to 8.6 per 100,000 women for all women in Australia, and 11.5 per 100,000 women for the target group (Table 13, page 58).
- In 1998, cervical cancer was the 10th most frequently diagnosed new cancer in women. There were 868 new cases of cervical cancer diagnosed in Australia in 1998, and of these 694 were women in the target age group 20-69 years (Table 12, page 57).
- Between 1987 and 1998 the age-standardised incidence rate for cervical cancer for women of all ages declined by 35.8%, and for the target age group by 36.1% (Table 13, page 58).



Refer to Table 13 (page 58).

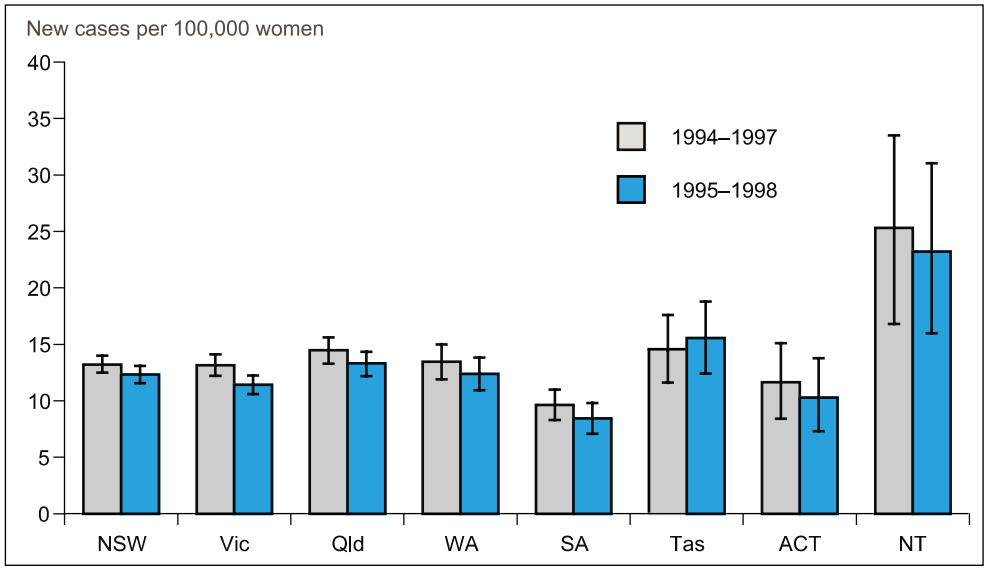
Note: Rates are expressed per 100,000 women.

Source: National Cancer Statistics Clearing House (AIHW).

Figure 11: Age-specific incidence rates of cervical cancer, Australia, 1997 and 1998

Year	Age group										
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	20-69
	(Number per 100,000 women)										
1997	1.3	5.8	10.8	13.6	14.9	12.5	14.0	11.9	14.6	15.4	10.8
1998	2.0	6.4	12.0	13.5	14.7	16.9	11.4	12.8	14.9	17.2	11.5

- The age-specific rate of cervical cancer incidence differs from most other cancers in that it rises rapidly in women in the young age groups; in 1998 the age-specific rate for women aged 45-49 years was 16.9 per 100,000 women. From that age, the rate declines to 11.4 at age group 50-54, then has an upward trend to 17.2 at age group 65-69.



Refer to Tables 14b and 15b (pages 60 and 62).

Notes

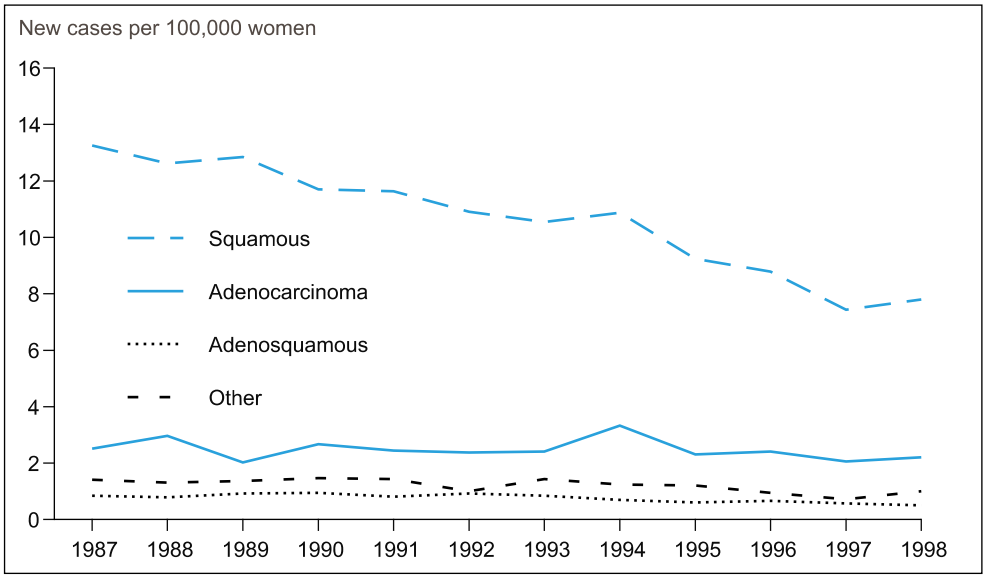
1. Rates are expressed per 100,000 women and age standardised to the Australian 1991 population.
2. Bars on graphs represent 95% confidence intervals.

Source: National Cancer Statistics Clearing House (AIHW).

Figure 12: Age-standardised cervical cancer incidence rates by women aged 20-69 years, by States and Territories, 1994-1997 and 1995-1998

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
1994-1997	13.2	13.1	14.5	13.5	9.6	14.4	11.6	25.3	13.2
95% CI	12.5-14.0	12.2-14.1	13.3-15.6	11.9-15.0	8.3-11.0	11.6-17.6	8.4-15.1	16.8-33.5	12.8-13.7
1995-1998	12.3	11.4	13.3	12.4	8.4	15.6	10.3	23.2	12.1
95% CI	11.6-13.1	10.6-12.2	12.2-14.3	10.9-13.8	7.1-9.8	12.4-18.8	7.3-13.8	16.0-31.0	11.6-12.5

- There was a considerable range in the incidence of cervical cancer among States and Territories for women aged 20-69 years. In the period 1995-1998 South Australia had the lowest incidence at 8.4 per 100,000 women compared with the Northern Territory, which had the highest rate of 23.2 per 100,000 women. The South Australian rate was significantly different from all States while the Northern Territory was significantly different from all States and the Australian Capital Territory except Tasmania (Table 15b, page 62).
- Between the two periods 1994-1997 and 1995-1998 the incidence rate declined in all States and Territories except Tasmania. However, the decline is not statistically significant. The rate of decrease in Victoria, South Australia and the Australian Capital Territory was over 11% (Tables 14b and 15b, pages 60 and 62).



Refer to Table 16b (page 63).

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 by women aged 20-69 years, Australia, 1987-1998

Histological type	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Squamous	13.3	12.6	12.8	11.7	11.6	10.9	10.5	10.9	9.2	8.8	7.5	7.8
Adenocarcinoma	2.5	3.0	2.0	2.7	2.4	2.4	2.4	3.3	2.3	2.4	2.1	2.2
Adeno-squamous	0.8	0.8	0.9	0.9	0.8	0.9	0.8	0.7	0.6	0.7	0.5	0.5
Other	1.4	1.3	1.4	1.5	1.4	1.0	1.4	1.2	1.1	0.9	0.7	1.0

- In 1998, squamous cell carcinomas of the cervix accounted for approximately 68.0% of all new cases of cervical cancer in women aged 20-69 years, adenocarcinomas 19.3%, adeno-squamous 4.3% and a range of other mixed and unknown histologies comprised the remaining 8.4% (Table 16a, page 63).

Indicator 8: Incidence by location

Incidence rates of cervical cancer per 100,000 estimated resident female population in a 3-year period by location 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 Table 19 (page 65).

Notes:

1. The age-standardised rates are presented as 3-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 by women aged 20-69 years, Australia, 1995-1997 and 1996-1998

	Metropolitan		Rural		Remote	
	1995-1997	1996-1998	1995-1997	1996-1998	1995-1997	1996-1998
AS rate	12.5	11.7	11.6	11.5	16.1	14.9
95% CI	11.9-13.0	11.1-12.2	10.6-12.5	10.6-12.6	12.2-20.1	11.1-18.4

- In the 3-year period 1996-1998 there were 1,874 new cases (72% of all new cases) of cervical cancer in metropolitan locations, 638 new cases (25% of all new cases) in rural locations and 77 new cases (3% of all new cases) in remote locations (Table 18, page 64).
- In the period 1996-1998, the age-standardised cervical cancer incidence rate for women in the target age group 20-69 years was higher in remote locations (14.9 per 100,000 women) than in metropolitan and rural locations. This difference was not statistically significant. During the same period, the corresponding rates for cervical cancer incidence in metropolitan and rural locations were 11.7 and 11.5 per 100,000 women respectively (Table 19, page 65).

- The age-standardised incidence rate of cervical cancer in all locations for women aged 20-69 years declined between the periods 1995-1997 and 1996-1998. However, the decline is not statistically significant.

Age-specific features

(Table 19, page 65)

- Very few cervical cancers occur in women under the age of 20. The incidence rate of cervical cancer increases with age.
- Between the periods 1995-1997 and 1996-1998 age-specific rates for the incidence of cervical cancer declined in almost all ages in metropolitan areas. However, the age pattern of cervical cancer incidence in rural and remote areas shows fluctuations between the same periods. This may be due to small numbers of cervical cancer occurring in these areas.

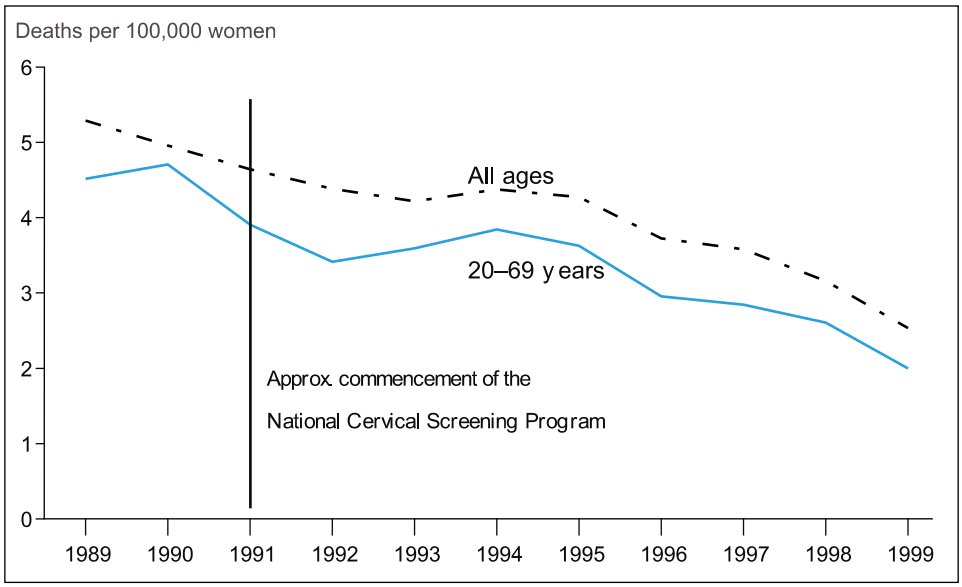
Mortality

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. These indicators are important because from them an assessment can be made of changes in mortality rates 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.

Indicator 7: Mortality

Mortality 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 (page 67).

Notes

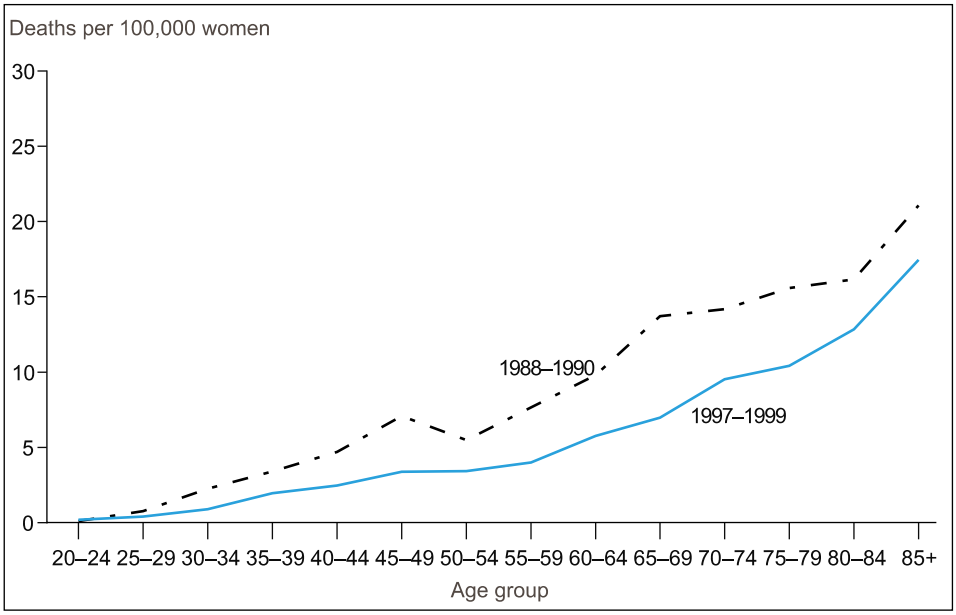
1. Rates for all ages are based on data for women aged 20 years and over.
2. Rates are expressed per 100,000 women and age standardised to the Australian 1991 population.

Source: AIHW Mortality Database.

Figure 15: Age-standardised mortality rates from cervical cancer, Australia, 1989-1999

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
All ages	5.3	5.0	4.6	4.4	4.2	4.4	4.3	3.7	3.6	3.2	2.5
20-69 years	4.5	4.7	3.9	3.4	3.6	3.8	3.6	3.0	2.8	2.6	2.0

- Cervical cancer is the 18th most common cause of cancer death in women, accounting for 220 deaths in 1999 (Table 20, page 66). The age-standardised mortality rate for all ages was 2.5 per 100,000 women in 1999. The mortality rate from cervical cancer has been declining over time, and between 1989 and 1999 the age-standardised cervical cancer mortality rate declined by 53% (Table 21, page 67).
- In the target age group (women aged 20-69), mortality rates have declined at approximately the same rate as those for all ages from 4.5 per 100,000 women in 1989 to 2.0 per 100,000 women in 1999 (Table 21, page 67).
- The mortality rate from cervical cancer declined in most age groups between the years 1989 and 1999, in particular in the 30-34 age group (74%), and in the 65-69 age group (62%) (Table 21, page 67).



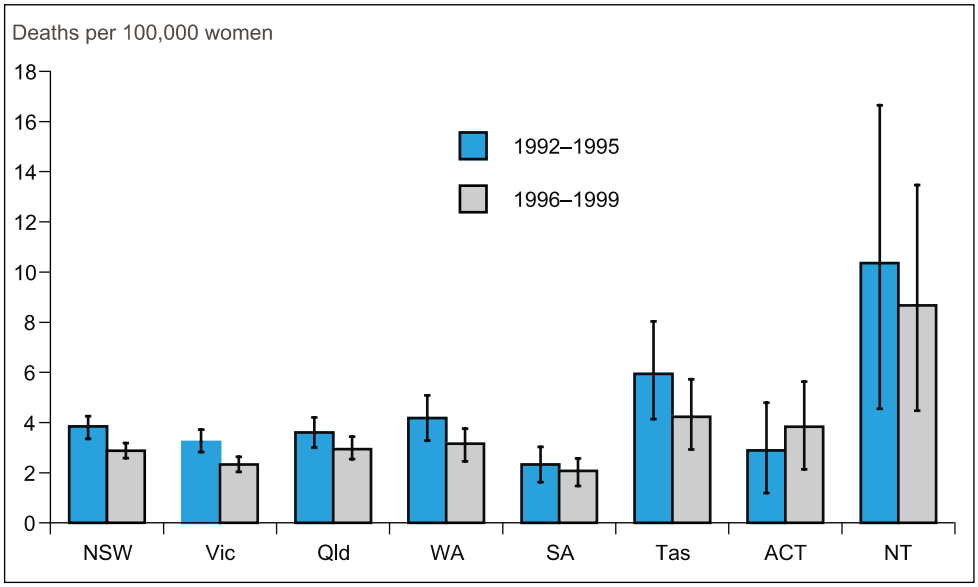
Note: Rates are expressed per 100,000 women.

Source: AIHW Mortality Database.

Figure 16: Age-specific cervical cancer mortality rates by age group, Australia, 1988-1990 and 1997-1999

	Age group													
Period	**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+**
1988-1990	0.1	0.8	2.3	3.4	4.7	7.1	5.5	7.7	9.8	13.7	14.2	15.6	16.2	21.1
1997-1999	0.2	0.4	0.9	2.0	2.5	3.4	3.4	4.0	5.8	7.0	9.5	10.4	12.8	17.4

- Cervical cancer mortality rates increase with age. Very few deaths occur in women aged less than 20 years of age (on average <1 per year). Mortality rates tend to increase gradually from age 20-24 years through to those women in the age groups 60-plus where the rate increases sharply.
- In the period 1997-1999, in the target age group, the age-specific mortality rate increased gradually from a rate of 0.2 per 100,000 women in those aged 20-24 years to 7.0 deaths per 100,000 women in the 65-69 age group.
- Between 1988-1990 and 1997-1999, age-specific mortality rates have declined in all age groups.



Refer to Tables 23 and 25 (pages 69 and 71).

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 not place of death.
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 mortality rates by women aged 20-69 years, by States and Territories, 1992-1995 and 1996-1999

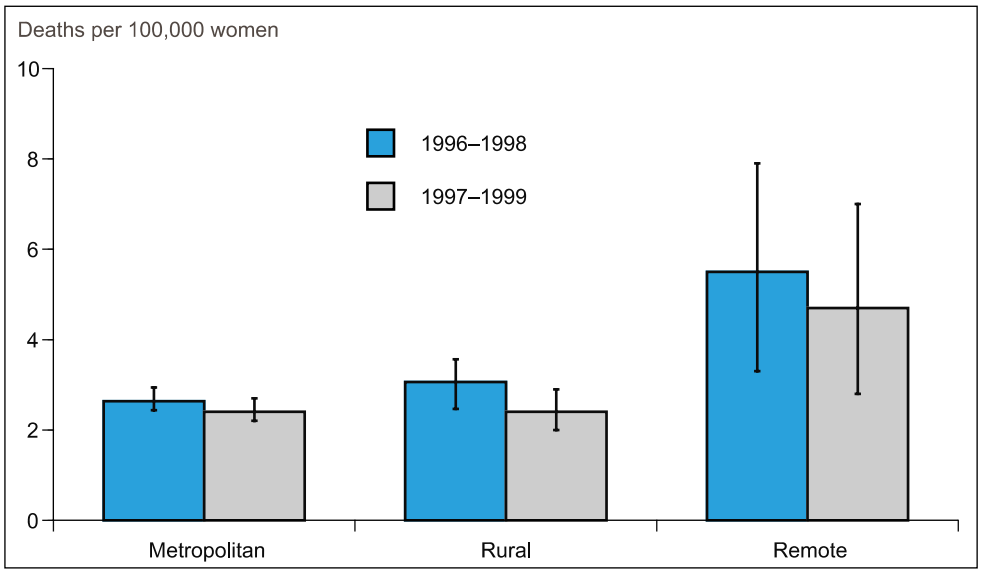
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Rate 1992-1995	3.9	3.2	3.6	4.2	2.3	5.9	2.9	10.4	3.6
95% CI	3.4-4.3	2.8-3.7	3.0-4.2	3.3-5.1	1.6-3.0	4.1-8.0	1.2-4.8	4.6-16.7	3.4-3.9
Rate 1996-1999	2.9	2.3	2.9	3.2	2.1	4.2	3.8	8.7	2.8
95% CI	2.6-3.2	2.0-2.6	2.5-3.4	2.5-3.8	1.5-2.6	2.9-5.7	2.1-5.6	4.5-13.5	2.6-3.0

- There were 1,091 deaths from cervical cancer in the States and Territories during the period from 1996-1999. As expected, the largest number of deaths from cervical cancer were in the most populous States of New South Wales (391) and Victoria (244) (Table 24, page 70).
- There was considerable variation in the age-standardised mortality rates for all women among States and Territories. The Northern Territory rate (10.6 per 100,000 women) was over twice as high as that of the next highest State, Tasmania (4.7 per 100,000 women) (Table 25, page 71).The age-standardised mortality rate for the Northern Territory reflects its high proportion of Indigenous women. In the period 1987-1993 Indigenous women were almost 12 times more likely to die from cervical cancer than other Northern Territory women (d'Espaignet et al 1996).
- There was a similar pattern among States and Territories for women in the target age group, 20-69 years. The Northern Territory mortality rate (8.7 per 100,000 women) was again more than double that of the next highest State, Tasmania (4.2 per 100,000 women), and South Australia (2.1 per 100,000 women) and Victoria (2.3 per 100,000 women) had the lowest rates of mortality from cervical cancer (Table 25, page 71).

Indicator 9: Mortality by location

Mortality rates from cervical cancer per 100,000 estimated resident female population in a 3-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 detailed data refer to Table 27 (page 73).



Notes

1. The age-standardised rates are presented as 3-year rolling blocks of data.
2. Deaths derived from place of usual residence and not place of death.
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 mortality rates by women aged 20-69 years, by location, 1996-1998 and 1997-1999

	Metropolitan		Rural		Remote	
	1996-1998	1997-1999	1996-1998	1997-1999	1996-1998	1997-1999
Rate	2.6	2.4	3.1	2.4	5.5	4.7
95% CI	2.4-2.9	2.2-2.7	2.5-3.6	2.0-2.9	3.3-7.9	2.8-7.0

- In the 3-year period 1997-1999 there were 551 deaths from cervical cancer in metropolitan locations (70% of all cervical cancer deaths), 208 deaths (26% of all cervical cancer deaths) in rural locations and 30 deaths (4% of all cervical cancer deaths) in remote locations (Table 26, page 72).
- The age-standardised cervical cancer mortality rate for women in the target age group 20-69 years was highest in remote locations (4.7 per 100,000 women) in the period 1997-1999. During the same period the rate for cervical cancer mortality in both metropolitan and rural locations were 2.4 per 100,000 women (Table 27, page 73).

- The age-standardised cervical cancer mortality rate declined for all locations between the periods 1996-1998 and 1997-1999, for women in the target age group 20-69 years. The overall decline in the target age group was 8% in metropolitan locations, 23% in rural locations, and 15% in remote locations (Table 27, page 73).
- The higher mortality rate in remote location reflects to a large extent the relatively high proportion of Indigenous people in remote areas, and the higher mortality rates among Indigenous women (see Indicator 10).

Age-specific features

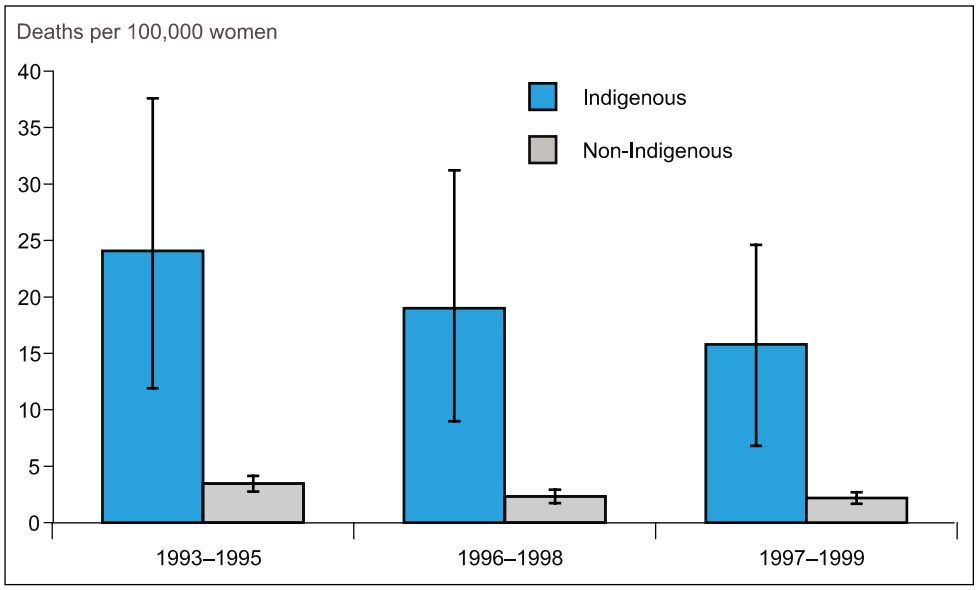
(Tables 26 and 27, pages 72 and 73)

- Between the periods 1996-1998 and 1997-1999, mortality from cervical cancer has declined in nearly all age groups in metropolitan and rural areas. Numbers in remote areas are small and trends are difficult to assess.
- In all geographical locations, the age-specific mortality rates increased with increasing age.

Indicator 10: Indigenous mortality

Mortality rates from cervical cancer per 100,000 estimated resident female population in a 3-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 Table 29 (page 75).



Notes

1. The age-standardised rates are presented as 3-year rolling blocks of data.
2. Deaths derived from place of usual residence and not place of death.
3. Rates are expressed per 100,000 women and age standardised to the Australian 1991 population.
4. Only Western Australia, South 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 women aged 20-69 years, by Indigenous status, 1993-1995, 1996-1998 and 1997-1999

	Indigenous			Non-Indigenous		
	1993-1995	1996-1998	1997-1999	1993-1995	1996-1998	1997-1999
AS rate (A)	24.1	19.0	15.8	3.4	2.3	2.2
95% CI	11.9-37.6	9.0-31.2	6.8-24.6	2.8-4.1	1.8-2.9	1.7-2.7

- Due to the difficulties of Indigenous identification in health data collections, only mortality data from Western Australia, South Australia and the Northern Territory are of sufficient quality to be publishable. Therefore all cervical cancer mortality data for both Indigenous women and non-Indigenous women used in this analysis are confined to these States and Territory.

- In the 1997-1999 period there were 18 deaths attributable to cervical cancer among Indigenous women, an age-standardised rate of 29.0 per 100,000 women. This is over nine times the mortality rate for non-Indigenous women (3.2 per 100,000 women) (Tables 28 and 29, pages 74 and 75).
- The age-standardised mortality rate for Indigenous women in the target age group 20-69 years was 15.8 per 100,000 women for the period 1997-1999. The comparative figure for non-Indigenous women was 2.2 per 100,000 women (Table 29, page 75).
- Between the two periods 1996-1998 and 1997-1999, the Indigenous cervical cancer mortality rate among women in the target age group 20-69 years declined from 19 to 15.8 deaths per 100,000 women. When the mortality rate for the period 1993-1995 was included for comparison, the Indigenous mortality rate for the target age group still shows a decline. However, these rates 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 75).

Age-specific features

(Tables 28 and 29, pages 74 and 75)

- The numbers of deaths among Indigenous women in Western Australia, South Australia and the Northern Territory are very small in most 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 at almost every age group.

Tables

Indicator 1: Participation

Table 1a: Number of women participating in the National Cervical Screening Program by age, States and Territories, 1997-1998

Age group	NSW	Vic	WA[a]	SA[b]	Tas	ACT[a]	NT	Australia
20-24	106,771	82,031	36,422	27,668	9,989	7,042	4,880	274,803
25-29	152,260	122,571	47,752	36,982	11,899	8,772	6,228	386,464
30-34	154,446	126,446	48,703	38,060	11,989	8,552	5,441	393,637
35-39	154,060	127,261	49,431	39,175	12,698	8,407	4,846	395,878
40-44	130,315	110,367	42,817	34,069	10,682	7,587	3,799	339,636
45-49	109,283	95,905	35,005	29,617	9,051	7,018	3,091	288,970
50-54	84,773	76,368	25,537	23,309	6,896	5,257	1,898	224,038
55-59	56,631	52,128	16,903	15,820	4,701	3,101	1,069	150,353
60-64	41,976	39,569	12,735	12,639	3,582	2,001	535	113,037
65-69	31,116	31,903	9,323	9,972	2,706	1,363	305	86,688
70-74	13,371	15,051	3,590	7,547	864	535	117	41,075
75-79	5,154	5,357	1,274	n.a.	319	195	52	12,351
80-84	1,562	1,721	389	n.a.	106	51	15	3,844
85+	564	660	38	n.a.	35	15	8	1,320
Not stated	9,080	n.a.	n.a.	389	4	40	43	9,556
All ages	**1,051,362**	**887,338**	**329,919**	**275,247**	**85,521**	**59,936**	**32,327**	**2,721,650**
Ages 20-69 years	1,021,631	864,549	324,628	267,311	84,193	59,100	32,092	2,653,504

(a) The WA and ACT registers only include women with valid WA and ACT addresses 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 overestimated 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 in February 1999, therefore no data are available for this report.

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, 1997-1998

Age group	NSW	Vic	WA[a]	SA[b]	Tas	ACT[a]	NT	Australia
				(Per cent)				
20-24	48.2	48.8	54.5	55.8	65.3	52.5	60.6	50.6
25-29	62.6	66.4	68.1	69.4	72.4	66.5	66.0	65.5
30-34	65.7	71.5	71.3	71.6	72.3	70.2	65.8	69.0
35-39	66.6	74.9	73.2	72.5	72.7	70.8	67.1	70.7
40-44	65.4	74.6	71.4	72.0	70.2	71.7	64.3	69.8
45-49	64.3	75.6	69.6	71.0	69.8	72.8	68.1	69.4
50-54	66.1	80.7	72.0	74.0	70.9	79.4	64.7	72.5
55-59	56.6	70.8	62.3	65.0	60.4	71.3	60.7	62.9
60-64	48.3	61.6	57.0	59.0	53.4	63.2	46.8	54.9
65-69	36.4	51.3	45.1	46.6	41.5	50.2	39.4	43.4
Ages 20-84[c]								
Crude rate	55.9	63.3	62.3	61.7	61.7	64.4	63.2	59.9
AS rate	54.9	63.1	60.7	62.1	61.5	62.1	57.8	59.2
95% CI	54.8-55.0	63.0-63.2	60.5-60.9	61.9-62.4	61.1-61.9	61.6-62.6	57.1-58.5	59.1-59.2
Target age 20-69 years								
Crude rate	60.1	68.1	66.4	67.2	67.5	67.4	64.1	64.4
AS rate	59.4	67.8	65.7	66.7	66.9	67.0	62.0	63.9
95% CI	59.3-59.5	67.7-68.0	65.4-65.9	66.5-67.0	66.5-67.3	66.5-67.6	61.3-62.7	63.8-63.9

(a) The WA and ACT registers only include women with valid WA and ACT addresses, 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.

(c) Crude and age-standardised rates exclude women screened in the 85+ age group because hysterectomy fractions are not available for this age group.

(d) Age-standardised rates exclude cases for which ages are not stated.

Notes

1. These numbers may be overestimated 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 in February 1999, therefore no data are available for this report.
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, 1998-1999

Age group	NSW	Vic	WA[(a)]	SA[(b)]	Tas	ACT[(a)]	NT	Australia
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
80-84	1,517	1,437	382	n.a.	98	45	15	3,494
85+	534	618	49	n.a.	36	22	8	1,267
Not stated	5,485	n.a.	n.a.	31	7	15	28	5,566
All ages	**1,080,220**	**907,325**	**333,536**	**278,134**	**84,266**	**60,259**	**33,584**	**2,777,324**
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 include women with valid WA and ACT addresses, 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 overestimated 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 in February 1999, therefore no data are available for this report.

Source: AIHW analysis of State and Territory Cervical Cytology Registry data.

Table 2b: Proportion of women participation in the National Cervical Screening Program by age, States and Territories, 1998-1999

Age group	NSW	Vic	WA[a]	SA[b]	Tas	ACT[a]	NT	Australia
				(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
Ages 20-84[c]								
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
Age 20-69 years								
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 include women with valid WA and ACT addresses, 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.

(c) Crude and age-standardised rates exclude women screened in the 85+ age group because hysterectomy fractions are not available for this age group.

(d) Age-standardised rates exclude cases for which ages are not stated.

Notes

1. These numbers may be overestimated 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 in February 1999, therefore no data are available for this report.
3. Rates are standardised to the 1991 Australian total population.

Source: AIHW analysis of State and Territory Cervical Cytology Registry data.

Indicator 2: Early rescreening

Table 3: Number of women with repeat screenings in the 24 months following a negative Pap smear in February 1998 by States and Territories, and Australia, 1998-1999, and in the 24 months following a negative Pap smear in February 1997, Australia, 1997-1998

No. of tests	NSW	Vic	WA[(a)]	SA	Tas	ACT[(a)]	NT	Australia 1998-1999	Australia 1997-1998
					Number of women				
0	30,159	25,711	8,853	7,992	2,300	2,600	1,078	78,693	76,560
1	18,232	17,229	5,913	4,283	1,259	713	459	48,088	53,456
2	3,408	3,820	1,195	724	236	102	87	9,572	10,922
3	492	726	134	158	25	12	21	1,568	2,080
4	109	244	20	30	6	0	3	412	508
5 or more	20	121	6	9	0	0	1	157	196

(a) The WA and ACT registers only include women with valid WA and ACT addresses, respectively.

Notes

1. These numbers may be overestimated 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 in February 1999, therefore no data are available for this report.

Source: State and Territory Cervical Cytology Registry data.

Table 4: Percentage of women with repeat screenings in the 24 months following a negative smear in February 1998 by States and Territories, and Australia, 1997-1998, and in the 24 months following a negative Pap smear in February 1997, Australia, 1997-1998

No. of tests	NSW	Vic	WA[(a)]	SA	Tas	ACT[(a)]	NT	Australia 1998-1999	Australia 1997-1998
					Per cent of women				
0	57.5	53.7	54.9	60.6	60.1	75.9	65.4	56.8	53.3
1	34.8	36.0	36.7	32.5	32.9	20.8	27.8	34.7	37.2
2	6.5	8.0	7.4	5.5	6.2	3.0	5.3	6.9	7.6
3	0.9	1.5	0.8	1.2	0.7	0.4	1.3	1.1	1.4
4	0.2	0.5	0.1	0.2	0.2	0.0	0.2	0.3	0.4
5 or more	0.0	0.3	0.0	0.1	0.0	0.0	0.1	0.1	0.1

(a) The WA and ACT registers only include women with valid WA and ACT addresses, respectively.

Notes

1. These numbers may be overestimated 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 in February 1999, therefore no data are available for this report.

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, by States and Territories, 1998

Abnormalities	NSW	Vic	WA	SA	Tas	NT	Australia
Low-grade	5,799	3,329	2,090	2,179	756	258	14,411
High-grade	3,960	2,994	1,414	1,505	534	298	10,701
Ratio	1.46	1.11	1.48	1.45	1.42	0.87	1.35
As a percentage of all screens in 1998							
Low-grade	0.9	0.6	1.1	1.4	1.6	1.4	0.9
High-grade	0.6	0.6	0.7	1.0	1.1	1.6	0.7

Notes

1. These numbers may be overestimated 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 in February 1999, therefore no data are available for this report.
3. The ACT did not collect histology details during this period; therefore no data are available for this indicator.

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, by States and Territories, 1999

Abnormalities	NSW	Vic	WA	SA	Tas	ACT	NT	Australia
Low-grade	6,207	4,197	2,563	1,767	640	221	158	15,753
High-grade	4,523	3,546	1,509	1,237	470	178	179	11,642
Ratio	1.37	1.18	1.70	1.43	1.36	1.24	0.88	1.35
As a percentage of all screens in 1999								
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. These numbers may be overestimated 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 in February 1999, therefore no data are available for this report.

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 States and Territories, 1998

Age group	NSW	Vic	WA	SA[(a)]	Tas	NT	Australia
20-24	13.9	11.9	13.9	18.9	22.9	24.6	14.3
25-29	13.0	12.2	13.9	18.9	19.9	26.5	13.9
30-34	8.1	7.7	9.3	11.6	15.8	18.3	8.8
35-39	5.7	5.6	6.1	8.3	11.5	13.5	6.3
40-44	3.6	3.5	4.7	6.6	6.3	8.4	4.1
45-49	2.4	1.9	2.4	4.9	4.0	4.5	2.6
50-54	1.9	1.4	1.6	3.7	1.7	7.3	1.9
55-59	1.5	1.2	1.9	3.2	1.5	6.5	1.6
60-64	1.5	1.6	1.5	3.2	2.5	3.2	1.7
65-69	0.9	0.8	1.1	2.5	0.0	0.0	1.0
70-74	2.5	0.8	n.a.	6.9	0.0	0.0	2.9
75-79	2.5	2.2	n.a.	n.a.	0.0	0.0	3.4
80-84	7.5	3.1	n.a.	n.a.	19.6	0.0	6.0
85+	6.8	3.9	n.a.	n.a.	0.0	0.0	4.8
All ages	**6.4**	**5.6**	**7.2**	**9.5**	**10.9**	**16.0**	**6.8**
Ages 20-69 years	6.4	5.7	7.1	9.6	11.0	16.1	6.7

(a) 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 overestimated 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 in February 1999, therefore no data are available for this report.
3. The ACT did not collect histology details during this period; therefore no data are available for this indicator.

Source: State and Territory Cervical Cytology Registry data.

Table 6b: Rate of histologically confirmed high-grade abnormalities per 1,000 women screened, by States and Territories, 1999

Age group	NSW	Vic	WA	SA[(a)]	Tas	ACT	NT	Australia
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
All ages	**7.4**	**6.8**	**7.8**	**8.3**	**9.9**	**7.0**	**9.7**	**7.5**
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 overestimated 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 in February 1999, therefore no data are available for this report.

Source: State and Territory Cervical Cytology Registry data.

Table 7a: Number of histologically confirmed high-grade abnormalities by age, by States and Territories, 1998

Age group	NSW	Vic	WA	SA[(a)]	Tas	NT	Australia
20-24	847	566	309	305	127	66	2,220
25-29	1,180	895	408	411	137	95	3,126
30-34	748	591	276	259	109	58	2,041
35-39	531	437	184	192	85	39	1,468
40-44	284	233	124	134	39	19	833
45-49	163	116	52	87	21	8	447
50-54	101	65	25	51	7	8	257
55-59	51	38	19	29	4	4	145
60-64	37	38	11	23	5	1	115
65-69	17	15	6	14	0	0	52
70-74	19	8	6	29	0	0	62
75-79	7	7	7	n.a.	0	0	21
80-84	6	3	1	n.a.	1	0	11
85+	2	2	0	n.a.	0	0	4
Age not stated	3	n.a.	n.a.	1	0	0	4
All ages	**3,996**	**3,014**	**1,428**	**1,535**	**535**	**298**	**10,806**
Ages 20-69 years	3,960	2,994	1,414	1,505	534	298	10,704

(a) 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 overestimated 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 in February 1999, therefore no data are available for this report.

Source: State and Territory Cervical Cytology Registry data.

Table 7b: Number of histologically confirmed high-grade abnormalities by age, by States and Territories, 1999

Age group	NSW	Vic	WA	SA[(a)]	Tas	ACT	NT	Australia
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	n.a.	0	5	0	28
80-84	2	2	1	n.a.	1	0	0	6
85+	0	1	2	n.a.	0	0	0	3
Age not stated	5	0	0	0	0	0	0	5
All ages	**4,558**	**3,569**	**1,519**	**1,260**	**473**	**232**	**180**	**11,789**
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 overestimated 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 in February 1999, therefore no data are available for this report.

Source: State and Territory Cervical Cytology Registry data.

Table 8a: Number of women screened by age, by States and Territories, 1998

Age group	NSW	Vic	WA	SA[(a)]	Tas	NT	Australia
20-24	60,919	47,286	22,267	16,122	5,532	2,678	154,804
25-29	90,720	73,379	29,342	21,785	6,883	3,584	225,693
30-34	92,053	76,937	29,693	22,260	6,911	3,170	231,024
35-39	93,293	77,383	30,288	23,111	7,387	2,896	234,358
40-44	79,402	67,374	26,259	20,351	6,177	2,249	201,812
45-49	66,812	58,146	21,676	17,464	5,207	1,783	171,088
50-54	52,675	46,514	15,753	13,857	4,073	1,092	133,964
55-59	34,574	31,584	10,123	9,087	2,723	615	88,706
60-64	25,243	23,974	7,609	7,138	2,000	308	66,272
65-69	17,970	19,257	5,453	5,526	1,476	153	49,835
70-74	7,685	9,235	n.a.	4,161	503	73	21,657
75-79	2,841	3,170	n.a.	n.a.	183	32	6,226
80-84	805	979	n.a.	n.a.	51	8	1,843
85+	293	518	n.a.	n.a.	16	6	833
Age not stated	4,335	n.a.	n.a.	132	3	22	4,492
All ages	**629,620**	**535,736**	**198,463**	**160,994**	**49,125**	**18,669**	**1,592,607**
Ages 20-69 years	613,661	521,834	198,463	156,701	48,369	18,528	1,557,556

(a) 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 overestimated 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 in February 1999, therefore no data are available for this report.

Source: State and Territory Cervical Cytology Registry data.

Table 8b: Number of women screened by age, by States and Territories, 1999

Age group	NSW	Vic	WA	SA[(a)]	Tas	ACT	NT	Australia
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
All ages	**613,401**	**522,799**	**194,671**	**151,403**	**47,934**	**33,232**	**18,572**	**1,582,012**
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 overestimated 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 in February 1999, therefore no data are available for this report.

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, 1998

	NSW	Vic	WA	SA	Tas	ACT	NT	Australia
All ages								
AS rate	6.0	5.4	6.0	8.8	9.8	n.a.	11.9	6.4
95% CI	5.7-6.2	5.1-5.6	5.7-6.4	8.4-9.3	8.8-11.0	n.a.	10.5-13.4	6.3-6.6
Target age 20-69								
AS rate	6.3	5.8	6.7	9.5	10.5	n.a.	13.3	6.7
95% CI	6.1-6.5	5.5-6.0	6.4-7.1	9.0-10.1	9.7-11.4	n.a.	11.7-14.9	6.6-6.9

Notes

1. These numbers may be overestimated 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 in February 1999, therefore no data are available for this report.
3. The ACT did not collect histology details during this period; therefore no data are available for this report.
4. Standardised to the 1991 Australian total population.

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, 1999

	NSW	Vic	WA	SA	Tas	ACT	NT	Australia
All ages								
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
Target age 20-69								
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. These numbers may be overestimated 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 in February 1999, therefore no data are available for this report.
3. Standardised to the 1991 Australian total population.

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, 1987-1998

Age group	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
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	1	0	0	0	0	0	0	0
20-24	3	4	1	4	0	5	1	7	1	6	2	3
25-29	8	13	12	15	14	13	7	17	17	18	10	17
30-34	18	20	26	31	31	32	31	32	41	18	27	18
35-39	25	13	10	24	38	23	26	31	29	35	22	24
40-44	14	12	17	22	32	24	16	25	29	23	21	20
45-49	10	9	5	18	10	12	15	27	22	11	11	12
50-54	3	6	4	4	11	12	17	9	12	11	8	12
55-59	4	5	5	8	6	12	5	5	8	7	7	3
60-64	3	2	6	8	7	7	6	10	10	6	5	5
65-69	1	2	2	6	7	9	10	6	7	10	2	2
70-74	0	0	0	2	4	2	4	6	5	3	4	3
75-79	1	1	1	3	3	2	1	3	5	2	2	2
80-84	0	0	1	0	2	0	0	0	1	1	0	1
85+	0	0	0	0	0	0	1	2	1	1	0	0
All ages	**90**	**87**	**90**	**145**	**166**	**153**	**140**	**180**	**188**	**152**	**121**	**122**
Ages 20-69 years	89	86	88	140	156	149	134	169	176	145	115	116

Source: National Cancer Statistics Clearing House (AIHW).

Table 11: Age-specific and age-standardised rates of micro-invasive cervical cancer by age, Australia, 1987-1998

Age group	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
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	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-24	0.5	0.6	0.2	0.6	0.0	0.7	0.1	1.0	0.1	0.9	0.3	0.5
25-29	1.2	1.9	1.7	2.1	2.0	1.9	1.0	2.5	2.5	2.5	1.4	2.3
30-34	2.8	3.0	3.8	4.5	4.4	4.4	4.2	4.4	5.6	2.5	3.8	2.5
35-39	4.0	2.0	1.5	3.7	5.7	3.4	3.8	4.4	4.1	4.8	3.0	3.2
40-44	2.6	2.1	2.9	3.6	5.0	3.7	2.5	3.8	4.3	3.4	3.0	2.8
45-49	2.4	2.1	1.1	3.8	2.0	2.2	2.6	4.5	3.6	1.7	1.7	1.8
50-54	0.8	1.6	1.0	1.0	2.7	2.8	3.9	2.0	2.5	2.2	1.5	2.1
55-59	1.1	1.4	1.4	2.2	1.7	3.3	1.3	1.3	2.0	1.7	1.7	0.7
60-64	0.8	0.5	1.6	2.2	1.9	1.9	1.7	2.8	2.8	1.7	1.4	1.4
65-69	0.3	0.6	0.6	1.7	2.0	2.5	2.8	1.7	2.0	2.8	0.6	0.6
70-74	0.0	0.0	0.0	0.7	1.4	0.7	1.3	1.9	1.5	0.9	1.2	0.9
75-79	0.5	0.5	0.5	1.4	1.3	0.9	0.4	1.3	2.1	0.8	0.8	0.7
80-84	0.0	0.0	0.7	0.0	1.4	0.0	0.0	0.0	0.6	0.6	0.0	0.6
85+	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.6	0.7	0.7	0.0	0.0
All ages												
Crude rate	1.1	1.1	1.1	1.7	1.9	1.7	1.6	2.0	2.1	1.7	1.3	1.3
AS rate (A)	1.6	1.5	1.5	2.4	2.7	2.5	2.2	2.8	2.9	2.3	1.8	1.8
95% CI	1.3-2.0	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
AS rate (W)	1.6	1.6	1.5	2.4	2.6	2.5	2.2	2.8	2.8	2.3	1.8	1.8
95% CI	1.3-2.0	1.2-1.9	1.2-1.8	2.0-2.9	2.2-3.0	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
Age 20-69 years												
Crude rate	1.8	1.7	1.7	2.6	2.9	2.7	2.4	3.0	3.1	2.5	2.0	2.0
AS rate (A)	1.8	1.7	1.7	2.6	2.9	2.7	2.4	3.0	3.1	2.5	2.0	1.9
95% CI	1.5-2.2	1.4-2.1	1.4-2.0	2.2-3.1	2.4-3.3	2.3-3.2	2.0-2.8	2.6-3.4	2.6-3.5	2.1-2.9	1.6-2.3	1.6-2.3
AS rate (W)	1.7	1.7	1.6	2.5	2.7	2.6	2.3	2.9	2.9	2.4	1.9	1.9
95% CI	1.4-2.1	1.3-2.0	1.3-1.9	2.1-3.0	2.3-3.1	2.2-3.1	1.9-2.7	2.5-3.3	2.5-3.4	2.0-2.8	1.5-2.2	1.5-2.2

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).

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

Table 12: New cases of cervical cancer by age, Australia, 1987-1998

Age group	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
0-4	0	1	0	0	0	0	0	0	0	0	0	0
5-9	0	0	0	0	0	0	0	1	0	0	0	0
10-14	0	0	0	0	0	0	0	0	0	0	0	0
15-19	3	4	1	1	1	0	1	1	2	1	1	1
20-24	16	18	16	13	11	9	10	16	5	15	9	13
25-29	64	76	66	61	48	51	36	48	51	43	42	47
30-34	137	130	127	109	119	106	105	119	112	69	77	85
35-39	149	137	121	154	140	126	129	130	114	139	101	101
40-44	113	124	127	136	153	128	129	131	117	117	103	103
45-49	96	92	90	122	101	100	99	132	98	102	80	110
50-54	65	63	83	66	91	78	89	88	57	78	75	65
55-59	60	66	84	81	57	78	80	73	66	64	50	55
60-64	106	91	82	77	84	77	75	89	67	61	53	55
65-69	87	102	98	73	90	88	93	92	77	65	54	60
70-74	78	55	66	68	78	70	65	77	74	58	44	61
75-79	55	50	50	49	48	52	49	65	50	49	46	44
80-84	31	34	26	29	40	34	36	39	30	40	31	39
85+	26	22	19	23	35	21	22	24	32	25	28	29
All ages	**1,086**	**1,065**	**1,056**	**1,062**	**1,096**	**1,018**	**1,018**	**1,125**	**952**	**926**	**794**	**868**
Ages 20-69 years	893	899	894	892	894	841	845	918	764	753	644	694

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, 1987-1998

Age group	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
0-4	0.0	0.2	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	0.2	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	0.4	0.6	0.1	0.1	0.2	0.0	0.2	0.2	0.3	0.2	0.2	0.2
20-24	2.5	2.8	2.4	1.9	1.6	1.3	1.4	2.3	0.7	2.2	1.3	2.0
25-29	9.4	10.9	9.3	8.6	6.9	7.4	5.3	6.9	7.4	6.1	5.8	6.4
30-34	21.2	19.7	18.7	15.7	16.7	14.6	14.4	16.2	15.3	9.5	10.8	12.0
35-39	23.9	21.6	18.7	23.5	21.1	18.6	18.7	18.6	16.0	19.1	13.6	13.5
40-44	21.1	21.8	21.3	22.0	23.9	19.9	19.9	19.9	17.5	17.2	14.9	14.7
45-49	22.8	21.1	19.7	25.5	20.1	18.6	17.3	22.3	15.9	15.9	12.5	16.9
50-54	17.7	16.7	21.3	16.5	22.0	18.4	20.5	19.2	12.0	15.7	14.0	11.4
55-59	16.3	18.2	23.3	22.6	15.9	21.3	21.3	18.7	16.7	15.7	11.9	12.8
60-64	28.8	24.6	22.1	20.8	22.7	21.1	20.9	24.9	18.8	17.1	14.6	14.9
65-69	27.5	31.0	28.6	20.9	25.6	24.9	26.2	26.2	21.7	18.3	15.4	17.2
70-74	29.2	20.6	24.8	25.1	27.6	23.9	21.4	24.6	22.9	17.7	13.4	18.5
75-79	27.7	24.3	23.3	22.2	21.3	22.7	21.3	28.1	21.4	20.1	18.0	16.4
80-84	25.0	26.3	19.4	20.8	27.5	22.5	22.7	23.3	17.4	22.6	17.3	21.7
85+	26.8	22.0	18.4	21.8	31.8	18.2	18.1	18.8	23.8	17.7	18.8	18.6
All ages												
Crude rate	13.3	12.9	12.5	12.4	12.6	11.6	11.5	12.5	10.5	10.1	8.5	9.2
AS rate (A)	13.4	12.9	12.5	12.3	12.3	11.3	11.1	12.0	10.0	9.5	8.0	8.6
AS rate (W)	11.0	10.6	10.3	10.2	10.1	9.3	9.1	9.9	8.1	7.8	6.5	7.0
Ages 20-69 years												
Crude rate	17.9	17.7	17.2	16.8	16.6	15.3	15.2	16.3	13.4	13.0	11.0	11.7
AS rate (A)	18.0	17.7	17.2	16.8	16.5	15.3	15.1	16.1	13.3	12.8	10.8	11.5
AS rate (W)	17.5	17.2	16.8	16.5	16.1	14.9	14.7	15.8	12.9	12.5	10.5	11.2

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, by States and Territories, for the 4-year period 1994-1997

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	1	0	0	0	1
10-14	0	0	0	0	0	0	0	0	0
15-19	3		2	0	0	0	0	0	5
20-24	10	13	16	3	0	3	0	0	45
25-29	50	43	43	20	16	6	4	2	184
30-34	135	90	74	32	24	15	4	3	377
35-39	165	113	109	39	28	12	7	11	484
40-44	141	134	84	54	28	10	11	6	468
45-49	152	98	78	37	26	9	5	7	412
50-54	117	72	59	22	12	5	5	6	298
55-59	89	61	44	27	14	8	7	3	253
60-64	92	76	38	31	18	10	2	3	270
65-69	103	72	54	29	18	8	1	3	288
70-74	96	55	44	25	21	7	3	2	253
75-79	68	64	41	12	15	8	0	2	210
80-84	43	44	18	15	11	4	5	0	140
85+	37	34	20	12	5	1	0	0	109
All ages	**1,301**	**969**	**724**	**358**	**237**	**106**	**54**	**48**	**3,797**
Ages 20-69 years	1,054	772	599	294	184	86	46	44	3,079

Source: National Cancer Statistics Clearing House (AIHW).

Table 14b: Age-specific rates of cervical cancer by States and Territories, for the 4-year period 1994-1997

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	0.5	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	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.2
20-24	1.1	1.9	3.1	1.1	0.0	4.5	0.0	0.0	1.6
25-29	5.3	6.0	8.5	7.4	7.5	9.0	7.8	5.6	6.6
30-34	13.7	12.3	14.3	11.4	10.5	20.6	7.8	9.0	13.0
35-39	17.0	15.7	21.1	13.7	12.1	15.9	13.5	36.6	16.8
40-44	15.6	19.9	17.4	20.0	12.8	14.3	21.8	22.9	17.4
45-49	18.2	15.7	17.2	15.4	12.6	14.0	10.5	32.5	16.5
50-54	17.5	14.6	16.6	12.1	7.4	9.7	15.1	40.8	15.2
55-59	16.0	14.8	15.7	18.3	10.3	18.4	30.3	33.2	15.7
60-64	18.2	20.4	15.7	24.5	14.4	25.5	11.4	49.4	18.8
65-69	20.4	19.6	22.8	24.4	13.9	21.0	6.4	70.6	20.4
70-74	20.7	16.3	20.6	24.1	17.0	19.6	21.3	69.0	19.5
75-79	19.7	25.9	25.5	15.7	16.3	29.2	0.0	107.9	21.9
80-84	17.4	24.2	15.9	25.9	16.4	20.2	80.1	0.0	20.1
85+	19.1	22.9	22.5	25.6	9.3	6.8	0.0	0.0	19.7
All ages									
Crude rate	10.5	10.5	11.0	10.3	8.0	11.1	8.8	14.1	10.4
AS rate (A)	9.8	9.8	10.7	10.1	7.3	10.6	9.0	20.3	9.8
95% CI	9.3-10.4	9.2-10.5	9.9-11.5	9.0-11.1	6.3-8.2	8.7-12.7	6.7-11.5	14.0-27.1	9.5-10.1
AS rate (W)	8.1	8.0	8.8	8.3	5.9	8.7	7.3	16.4	8.1
95% CI	7.6-8.6	7.5-8.5	8.1-9.5	7.3-9.1	5.1-6.7	7.1-10.3	5.4-9.3	11.5-21.3	7.8-8.3
Ages 20-69 years									
Crude rate	13.5	13.3	14.6	13.4	9.9	14.6	11.5	20.6	13.4
AS rate (A)	13.2	13.1	14.5	13.5	9.6	14.4	11.6	25.3	13.2
95% CI	12.5-14.0	12.2-14.1	13.3-15.6	11.9-15.0	8.3-11.0	11.6-17.6	8.4-15.1	16.8-33.5	12.8-13.7
AS rate (W)	12.9	12.8	14.1	13.2	9.4	14.0	11.5	24.9	12.9
95% CI	12.2-13.7	11.9-13.7	12.9-15.2	11.6-14.6	8.0-10.7	11.3-17.0	8.3-14.9	16.7-32.9	12.5-13.4

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, by States and Territories, for the 4-year period 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	2	1	2	0	0	0	0	0	5
20-24	12	9	13	3	0	5	0	0	42
25-29	56	39	42	15	16	8	4	3	183
30-34	120	79	74	30	24	14	1	1	343
35-39	157	97	102	39	20	20	9	11	455
40-44	136	116	80	58	24	9	10	7	440
45-49	148	93	66	41	22	8	4	8	390
50-54	117	60	52	20	11	5	5	5	275
55-59	82	61	41	24	13	7	4	3	235
60-64	84	62	38	24	15	9	2	2	236
65-69	85	64	54	25	16	7	2	3	256
70-74	90	55	38	22	21	6	3	2	237
75-79	65	53	39	12	13	5	0	2	189
80-84	46	50	15	14	11	1	3	0	140
85+	34	36	22	15	6	0	1	0	114
All ages	**1,234**	**875**	**678**	**342**	**212**	**104**	**48**	**47**	**3,540**
Ages 20-69 years	997	680	562	279	161	92	41	43	2,855

Source: National Cancer Statistics Clearing House (AIHW).

Table 15b: Age-specific rates of cervical cancer by States and Territories, for the 4-year period 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	0.2	0.2	0.4	0.0	0.0	0.0	0.0	0.0	0.2
20-24	1.3	1.3	2.5	1.1	0.0	7.8	0.0	0.0	1.5
25-29	5.9	5.3	8.0	5.5	7.5	12.1	7.6	8.1	6.4
30-34	12.3	10.9	14.3	10.7	10.8	19.9	2.0	3.0	11.9
35-39	15.9	13.3	19.2	13.5	8.6	26.3	17.4	35.8	15.5
40-44	14.8	17.0	16.1	21.0	10.9	12.7	20.0	26.0	16.0
45-49	17.4	14.6	14.2	16.5	10.5	12.3	8.2	35.9	15.3
50-54	16.6	11.5	13.6	10.3	6.4	9.3	14.0	31.5	13.2
55-59	14.4	14.5	14.0	15.7	9.3	15.7	16.5	31.1	14.2
60-64	16.6	16.5	15.4	18.6	12.0	22.9	11.1	31.3	16.3
65-69	16.9	17.5	22.7	20.9	12.6	18.4	12.7	68.2	18.2
70-74	19.2	16.1	17.5	20.9	17.0	16.9	21.0	66.1	18.1
75-79	18.1	20.6	23.2	15.0	13.5	17.7	0.0	102.9	18.9
80-84	18.2	27.1	12.8	23.9	16.2	4.9	45.8	0.0	19.8
85+	16.7	23.2	23.4	30.3	10.6	0.0	21.0	0.0	19.6
All ages									
Crude rate	9.8	9.4	10.1	9.7	7.1	10.8	7.8	13.5	9.6
AS rate (A)	9.1	8.7	9.8	9.3	6.4	10.7	7.9	18.8	9.0
95% CI	8.6-9.6	8.1-9.3	9.0-10.5	8.3-10.3	5.5-7.3	8.6-12.8	5.8-10.3	12.6-24.8	8.7-9.3
AS rate (W)	7.5	7.0	8.0	7.6	5.2	9.0	6.4	15.2	7.4
95% CI	7.1-8.0	6.5-7.5	7.4-8.6	6.8-8.4	4.5-5.9	7.2-10.8	4.6-8.4	10.6-19.5	7.1-7.6
Ages 20-69 years									
Crude rate	12.7	11.6	13.4	12.5	8.6	15.6	10.2	19.6	12.3
AS rate (A)	12.3	11.4	13.3	12.4	8.4	15.6	10.3	23.2	12.1
95% CI	11.6-13.1	10.6-12.2	12.2-14.3	10.9-13.8	7.1-9.8	12.4-18.8	7.3-13.8	16.0-31.0	11.6-12.5
AS rate (W)	12.1	11.1	12.9	12.0	8.2	15.1	10.1	22.9	11.8
95% CI	11.3-12.9	10.3-11.9	11.8-13.9	10.6-13.4	6.9-9.5	12.0-18.2	7.1-13.5	15.9-30.2	11.4-12.2

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 16a: Number of new cases of cervical cancer by histological type for women aged 20-69 years, Australia, 1987-1998

Histological type	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Squamous	657	642	669	620	633	600	587	617	532	519	445	472
Adenocarcinoma	125	150	102	144	137	133	135	189	134	142	124	134
Adeno-squamous	41	40	48	50	44	51	47	40	34	39	33	30
Other	70	67	75	78	80	57	76	71	64	53	42	58
Total	**893**	**899**	**894**	**892**	**894**	**841**	**845**	**917**	**764**	**753**	**644**	**694**
Micro-invasive	*89*	*86*	*88*	*140*	*156*	*149*	*134*	*169*	*176*	*145*	*115*	*116*

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, 1987-1998

Histological type	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Squamous	13.3	12.6	12.8	11.7	11.6	10.9	10.5	10.9	9.2	8.8	7.5	7.8
Adenocarcinoma	2.5	3.0	2.0	2.7	2.4	2.4	2.4	3.3	2.3	2.4	2.1	2.2
Adeno-squamous	0.8	0.8	0.9	0.9	0.8	0.9	0.8	0.7	0.6	0.7	0.5	0.5
Other	1.4	1.3	1.4	1.5	1.4	1.0	1.4	1.2	1.1	0.9	0.7	1.0
Micro-invasive	*1.8*	*1.7*	*1.7*	*2.6*	*2.9*	*2.7*	*2.4*	*3.0*	*3.1*	*2.5*	*2.0*	*1.9*

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

Source: National Cancer Statistics Clearing House (AIHW).

Table 17a: Number of new cases of cervical cancer by histological type for women, all ages, Australia, 1987-1998

Histological type	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Squamous	800	759	788	746	776	738	692	766	656	652	538	591
Adenocarcinoma	139	169	122	166	164	147	156	210	161	158	149	154
Adeno-squamous	47	45	53	56	51	56	56	50	39	46	39	35
Other	100	92	93	94	105	77	114	98	96	70	68	88
Total	1,086	1,065	1,056	1,062	1,096	1,018	1,018	1,124	952	926	794	868
Micro-invasive	*90*	*87*	*90*	*145*	*166*	*153*	*140*	*180*	*188*	*152*	*121*	*122*

Source: National Cancer Statistics Clearing House (AIHW).

Table 17b: Age-standardised incidence rates for cervical cancer by histological type for women, all ages, Australia, 1987-1998

Histological type	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Squamous	12.5	11.9	12.3	11.8	12.1	11.2	10.5	11.3	9.8	9.5	7.3	7.9
Adenocarcinoma	2.4	2.7	1.9	2.7	2.5	2.3	2.4	3.2	2.4	2.3	2.1	2.2
Adeno-squamous	0.8	0.7	0.9	0.9	0.8	0.9	0.8	0.7	0.6	0.7	0.6	0.5
Other	1.4	1.2	1.4	1.4	1.5	1.1	1.6	1.4	1.4	1.1	0.9	1.2
Micro-invasive	*1.6*	*1.5*	*1.5*	*2.4*	*2.7*	*2.5*	*2.2*	*2.8*	*2.9*	*2.3*	*1.8*	*1.8*

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

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, 1995-1997 and 1996-1998

	Metropolitan		Rural		Remote	
Age group	**1995-1997**	**1996-1998**	**1995-1997**	**1996-1998**	**1995-1997**	**1996-1998**
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	3	2	1	1	0	0
20-24	18	23	11	14	0	0
25-29	99	97	35	30	2	4
30-34	171	157	75	68	11	6
35-39	259	234	78	92	17	15
40-44	254	242	76	69	7	12
45-49	223	220	51	65	6	7
50-54	157	160	49	54	4	5
55-59	127	114	46	48	7	7
60-64	129	121	49	44	4	4
65-69	140	138	45	35	11	7
70-74	137	124	35	36	4	3
75-79	103	102	39	35	3	2
80-84	73	79	27	29	1	2
85+	69	62	14	18	2	2
All ages	**1,961**	**1,874**	**631**	**638**	**79**	**77**
Ages 20-69 years	1,576	1,505	515	519	69	67

Note: The numbers are presented as 3-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, 1995-1997 and 1996-1998

	Metropolitan		Rural		Remote	
Age group	**1995-1997**	**1996-1998**	**1995-1997**	**1996-1998**	**1995-1997**	**1996-1998**
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	0.2	0.2	0.0	0.0
20-24	1.1	1.5	2.7	3.6	0.0	0.0
25-29	6.2	5.9	7.7	6.7	3.1	5.8
30-34	10.9	10.0	14.4	13.4	15.7	9.1
35-39	16.6	14.8	14.0	16.1	25.6	22.9
40-44	17.3	16.2	14.7	13.0	12.3	21.6
45-49	16.1	15.7	10.9	13.6	13.5	14.0
50-54	14.5	13.8	12.7	13.1	10.6	12.2
55-59	14.8	12.9	13.6	13.9	26.3	24.5
60-64	17.3	16.0	15.7	14.2	16.8	17.5
65-69	18.8	18.8	15.1	11.6	63.6	39.6
70-74	19.7	17.7	12.9	13.2	33.5	23.7
75-79	19.6	18.5	19.6	16.9	32.4	21.0
80-84	19.2	20.6	19.0	20.1	15.3	28.3
85+	22.6	19.3	12.5	15.2	32.0	31.0
All ages						
AS rate (A)	9.3	8.7	8.5	8.4	12.2	11.1
95% CI	8.9-9.7	8.3-9.1	7.8-9.1	7.8-9.1	9.4-15.1	8.6-13.7
AS rate (W)	7.6	7.2	7.0	6.9	9.6	9.0
95% CI	7.3-8.0	6.8-7.5	6.4-7.5	6.4-7.5	7.6-12.0	6.8-11.0
Ages 20-69 years						
AS rate (A)	12.5	11.7	11.6	11.5	16.1	14.9
95% CI	11.9-13.0	11.1-12.2	10.6-12.5	10.6-12.6	12.2-20.1	11.1-18.4
AS rate (W)	12.2	11.4	11.3	11.3	15.1	14.3
95% CI	11.6-12.7	10.9-12.0	10.3-12.2	10.3-12.3	11.5-18.9	10.7-17.7

Notes

1. The numbers are presented as 3-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, 1989-1999

Age group	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
0-4	0	0	0	0	0	0	0	0	0	0	0
5-9	0	0	0	0	0	0	0	0	0	0	0
10-14	0	0	0	0	0	0	0	0	0	0	0
15-19	1	1	0	0	0	0	1	0	0	0	0
20-24	1	1	3	0	0	0	0	1	0	3	1
25-29	3	10	5	5	2	6	3	1	2	6	2
30-34	21	14	13	15	11	11	7	13	8	5	6
35-39	18	31	25	19	25	11	16	23	18	20	7
40-44	24	37	19	28	33	29	21	20	16	19	18
45-49	32	37	30	27	23	36	33	31	28	16	25
50-54	28	17	21	13	30	38	27	13	22	23	15
55-59	20	25	26	23	20	27	35	22	25	16	14
60-64	34	35	34	32	26	24	31	21	22	29	15
65-69	55	44	36	26	31	38	38	30	31	21	21
70-74	49	26	38	46	39	34	44	42	37	28	30
75-79	30	33	31	33	29	31	31	39	35	26	26
80-84	24	8	22	36	24	27	28	22	26	26	19
85+	22	25	33	23	24	24	20	24	30	30	21
All ages	**362**	**344**	**336**	**326**	**317**	**336**	**335**	**302**	**300**	**269**	**220**
Ages 20-69 years	236	251	212	188	201	220	211	175	172	158	124

Source: AIHW Mortality Database.

Table 21: Age-specific and age-standardised mortality rates for cervical cancer by age, Australia, 1989-1999

	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
5-9	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
15-19	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
20-24	0.2	0.1	0.4	0.0	0.0	0.0	0.0	0.1	0.0	0.5	0.2
25-29	0.4	1.4	0.7	0.7	0.3	0.9	0.4	0.1	0.3	0.8	0.3
30-34	3.1	2.0	1.8	2.1	1.5	1.5	1.0	1.8	1.1	0.7	0.8
35-39	2.8	4.7	3.8	2.8	3.6	1.6	2.2	3.2	2.4	2.7	0.9
40-44	4.0	6.0	3.0	4.4	5.1	4.4	3.1	2.9	2.3	2.7	2.5
45-49	7.0	7.7	6.0	5.0	4.0	6.0	5.4	4.8	4.4	2.5	3.8
50-54	7.2	4.2	5.1	3.1	6.9	8.4	5.7	2.6	4.1	4.0	2.5
55-59	5.5	7.0	7.2	6.3	5.3	7.0	8.8	5.4	6.0	3.7	3.1
60-64	9.2	9.4	9.2	8.8	7.2	6.7	8.7	5.9	6.1	7.8	4.0
65-69	16.0	12.6	10.2	7.4	8.7	10.7	10.7	8.5	8.8	6.0	6.1
70-74	18.4	9.6	13.5	15.7	12.8	10.7	13.6	12.8	11.3	8.5	9.1
75-79	14.0	15.0	13.7	14.4	12.6	13.6	13.3	16.0	13.7	9.7	9.2
80-84	17.9	5.7	15.1	23.8	15.2	16.2	16.2	12.5	14.5	14.4	10.6
85+	21.3	23.7	30.0	19.9	19.7	18.8	14.9	16.9	20.1	19.2	12.7
All ages											
AS rate (A)	5.3	5.0	4.6	4.4	4.2	4.4	4.3	3.7	3.6	3.2	2.5
AS rate (W)	4.8	4.6	4.2	3.8	3.8	4.0	3.9	3.2	3.1	2.8	2.2
Ages 20-69 years											
AS rate (A)	4.5	4.7	3.9	3.4	3.6	3.8	3.6	3.0	2.8	2.6	2.0
AS rate (W)	4.6	4.7	4.0	3.4	3.6	4.0	3.7	3.0	2.9	2.7	2.0

Notes

1. Rates for all ages are based on data for women aged 20 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, for the 4-year period 1992-1995

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	0	0	0	0	0	0	0
25-29	4	3	7	1	0	0	1	0	16
30-34	16	12	5	7	3	1	0	0	44
35-39	26	14	18	7	4	1	0	1	71
40-44	44	25	20	12	5	4	0	1	111
45-49	41	27	18	16	6	4	3	4	119
50-54	44	19	21	10	4	5	2	3	108
55-59	38	22	14	12	7	8	2	2	105
60-64	39	25	16	12	10	7	2	2	113
65-69	49	40	21	10	6	6	0	1	133
70-74	65	38	23	15	10	8	1	3	163
75-75	45	31	24	7	10	3	2	2	124
80-84	40	27	21	8	14	2	2	1	115
85+	30	32	8	11	5	4	1	0	91
All ages	**482**	**315**	**216**	**128**	**84**	**53**	**16**	**20**	**1,314**
Ages 20-69 years	301	187	140	87	45	36	10	14	820

Notes

1. Numbers were averaged over four years to smooth annual variations that may occur in the smaller States and Territories.
2. Deaths derived from place of usual residence and not place of death.

Source: AIHW Mortality Database.

Table 23: Age-specific and age-standardised mortality rates for cervical cancer by age, by States and Territories, for the 4-year period 1992-1995

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	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25-29	0.4	0.4	1.5	0.4	0.0	0.0	2.0	0.0	0.6
30-34	1.6	1.6	1.0	2.5	1.3	1.3	0.0	0.0	1.5
35-39	2.8	2.0	3.7	2.5	1.8	1.4	0.0	3.5	2.6
40-44	5.0	3.8	4.3	4.6	2.3	5.8	0.0	4.0	4.2
45-49	5.2	4.6	4.3	7.3	3.1	6.6	6.9	20.5	5.1
50-54	7.2	4.2	6.7	6.0	2.7	10.5	6.9	23.7	6.0
55-59	7.1	5.6	5.4	8.7	5.3	19.3	9.5	25.0	6.9
60-64	7.6	6.7	6.7	9.7	7.8	17.8	11.9	35.5	7.9
65-69	9.6	10.8	9.0	8.6	4.5	15.5	0.0	25.5	9.4
70-74	14.6	11.8	11.4	15.2	8.4	23.0	7.8	112.9	13.2
75-75	13.5	13.0	15.8	9.5	11.3	11.2	23.6	119.5	13.5
80-84	17.2	15.8	20.2	14.8	22.3	10.9	36.4	121.4	17.7
85+	17.1	23.5	10.0	26.3	10.3	30.1	26.0	0.0	18.2
All ages									
AS rate (A)	4.5	3.9	4.2	4.8	3.0	6.5	4.2	18.1	4.3
95% CI	4.1-4.9	3.5-4.4	3.6-4.9	3.9-5.6	2.4-3.7	4.8-8.4	2.3-6.4	9.4-28.0	4.1-4.6
AS rate (W)	5.8	5.0	5.0	5.5	4.1	8.1	3.8	8.8	5.3
95% CI	5.3-6.3	4.5-5.6	4.3-5.7	4.6-6.5	3.2-5.0	5.9-10.2	1.9-5.8	4.9-12.8	5.0-5.6
Ages 20-69 years									
AS rate (A)	3.9	3.2	3.6	4.2	2.3	5.9	2.9	10.4	3.6
95% CI	3.4-4.3	2.8-3.7	3.0-4.2	3.3-5.1	1.6-3.0	4.1-8.0	1.2-4.8	4.6-16.7	3.4-3.9
AS rate (W)	4.0	3.3	3.6	4.1	2.4	6.2	2.6	6.9	3.7
95% CI	3.5-4.4	2.8-3.7	3.0-4.2	3.3-5.0	1.7-3.1	4.1-8.2	1.0-4.4	3.4-10.8	3.4-3.9

Notes

1. The age-standardised rates were averaged over four years to smooth annual variations that may occur in the smaller States and Territories.
2. Deaths derived from place of usual residence and not place of death.
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, for the 4-year period 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	0	0	0	0	0	0	0	0	0
20-24	1	2	2	0	0	0	0	0	5
25-29	0	3	4	2	1	0	1	0	11
30-34	7	8	7	8	1	1	0	0	32
35-39	27	13	11	7	4	3	0	3	68
40-44	30	16	14	6	0	1	4	2	73
45-49	40	19	14	10	8	3	3	3	100
50-54	30	11	16	6	3	3	3	1	73
55-59	26	13	17	9	7	3	1	1	77
60-64	27	19	18	6	6	10	0	1	87
65-69	39	20	15	14	7	3	4	1	103
70-74	47	38	23	12	12	2	1	2	137
75-79	44	29	29	6	10	6	0	2	126
80-84	31	34	13	8	5	2	0	0	93
85+	42	19	14	18	8	3	2	0	106
All ages	**391**	**244**	**197**	**112**	**72**	**40**	**19**	**16**	**1,091**
Ages 20-69 years	227	124	118	68	37	27	16	12	629

Notes

1. Numbers were averaged over four years to smooth annual variations that may occur in the smaller States and Territories.
2. Deaths derived from place of usual residence and not place of death.

Source: AIHW Mortality Database.

Table 25: Age-specific and age-standardised mortality rates for cervical cancer by age, by States and Territories, for the 4-year period 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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-24	0.1	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.2
25-29	0.0	0.4	0.7	0.7	0.5	0.0	1.9	0.0	0.4
30-34	0.7	1.1	1.4	2.9	0.5	1.5	0.0	0.0	1.1
35-39	2.7	1.8	2.0	2.4	1.7	4.0	0.0	9.6	2.3
40-44	3.2	2.3	2.8	2.1	0.0	1.4	8.0	7.3	2.6
45-49	4.6	2.9	2.9	3.9	3.8	4.5	6.1	13.0	3.9
50-54	4.0	2.0	3.9	2.9	1.6	5.3	7.8	5.9	3.3
55-59	4.4	3.0	5.5	5.7	4.9	6.6	3.9	9.7	4.5
60-64	5.3	5.0	7.1	4.5	4.7	25.2	0.0	15.0	5.9
65-69	7.8	5.5	6.3	11.6	5.6	7.9	25.3	22.0	7.3
70-74	10.0	11.1	10.5	11.2	9.7	5.7	6.9	63.3	10.4
75-75	11.7	10.7	16.5	7.1	9.9	20.5	0.0	98.6	12.0
80-84	12.2	18.4	10.9	13.6	7.3	9.8	0.0	0.0	13.0
85+	19.6	11.7	14.0	34.4	13.4	18.3	38.9	0.0	17.3
All ages									
AS rate (A)	3.3	2.8	3.4	3.7	2.4	4.7	4.1	10.6	3.2
95% CI	3.0-3.7	2.5-3.2	2.9-3.9	3.0-4.4	1.9-3.0	3.3-6.2	2.4-6.0	4.9-17.7	3.0-3.4
AS rate (W)	2.7	2.0	2.7	3.0	1.8	4.3	4.2	6.8	2.6
95% CI	2.4-3.1	1.7-2.4	2.2-3.3	2.3-3.8	1.2-2.4	2.7-6.0	2.2-6.6	2.7-11.6	2.4-2.8
Ages 20-69 years									
AS rate (A)	2.9	2.3	2.9	3.2	2.1	4.2	3.8	8.7	2.8
95% CI	2.6-3.2	2.0-2.6	2.5-3.4	2.5-3.8	1.5-2.6	2.9-5.7	2.1-5.6	4.5-13.5	2.6-3.0
AS rate (W)	2.7	2.0	2.7	2.9	1.8	4.4	4.1	6.7	2.6
95% CI	2.3-3.1	1.7-2.4	2.3-3.2	2.2-3.6	1.2-2.4	2.7-6.0	2.2-6.3	3.0-11.0	2.4-2.8

Notes

1. The age-standardised rates were averaged over four years to smooth annual variations that may occur in the smaller States and Territories.
2. Deaths derived from place of usual residence and not place of death.
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, 1996-1998 and 1997-1999

	Metropolitan		Rural		Remote	
Age group	**1996-1998**	**1997-1999**	**1996-1998**	**1997-1999**	**1996-1998**	**1997-1999**
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	0	0	0	0	0	0
20-24	3	3	1	1	0	0
25-29	6	6	3	3	0	1
30-34	19	13	6	5	1	1
35-39	39	29	19	14	3	2
40-44	35	38	17	11	3	4
45-49	48	51	22	15	5	3
50-54	44	45	13	14	1	1
55-59	42	35	20	17	1	3
60-64	47	47	22	18	3	1
65-69	55	50	22	19	5	4
70-74	73	66	30	25	4	4
75-75	69	60	29	25	2	2
80-84	55	52	17	16	2	3
85+	65	56	20	24	0	1
All ages	**600**	**551**	**241**	**208**	**30**	**30**
Ages 20-69 years	338	317	145	117	22	20

Notes

1. Deaths derived from place of usual residence and not place of death.
2. The number of deaths is presented as 3-year rolling blocks of data.

Source: AIHW Mortality Database.

Table 27: Age-specific and age-standardised mortality rates for cervical cancer by age and location, 1996-1998 and 1997-1999

	Metropolitan		Rural		Remote	
Age group	**1996-1998**	**1997-1999**	**1996-1998**	**1997-1999**	**1996-1998**	**1997-1999**
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	0.0	0.0	0.0	0.0	0.0
20-24	0.2	0.2	0.2	0.3	0.0	0.0
25-29	0.4	0.4	0.7	0.7	0.0	1.4
30-34	1.2	0.8	1.2	1.0	1.4	1.4
35-39	2.5	1.8	3.3	2.5	4.5	3.0
40-44	2.4	2.5	3.2	2.0	5.3	6.9
45-49	3.4	3.6	4.6	3.1	10.5	6.2
50-54	3.8	3.7	3.2	3.3	2.6	2.4
55-59	4.8	3.8	5.7	4.7	3.5	10.1
60-64	6.2	6.1	7.0	5.6	14.0	4.5
65-69	7.5	6.9	7.3	6.3	28.4	22.3
70-74	10.4	9.4	11.1	9.1	29.5	28.6
75-75	12.6	10.4	13.9	11.5	20.8	19.7
80-84	14.3	13.5	11.7	11.0	28.3	40.4
85+	20.3	16.5	16.8	19.0	0.0	14.1
All ages						
AS rate (A)	3.7	3.4	4.1	3.4	7.4	7.0
95% CI	3.4-4.0	3.1-3.7	3.6-4.6	2.9-3.8	4.7-10.2	4.5-9.8
AS rate (W)	3.3	3.0	3.7	3.0	6.5	6.0
95% CI	3.0-3.6	2.7-3.3	3.2-4.1	2.6-3.5	4.2-9.1	3.9-8.3
Ages 20-69 years						
AS rate (A)	2.6	2.4	3.1	2.4	5.5	4.7
95% CI	2.4-2.9	2.2-2.7	2.5-3.6	2.0-2.9	3.3-7.9	2.8-7.0
AS rate (W)	2.6	2.4	3.0	2.4	5.3	4.5
95% CI	2.3-2.9	2.1-2.7	2.5-3.5	2.0-2.9	3.2-7.7	2.7-6.7

Notes

1. The age-standardised rates are presented as 3-year rolling blocks of data.
2. Deaths derived from place of usual residence and not place of death.
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, by Indigenous and non-Indigenous status, WA, SA, NT, 1996-1998 and 1997-1999

	Indigenous			Non-Indigenous		
Age group	**1993-1995**	**1996-1998**	**1997-1999**	**1993-1995**	**1996-1998**	**1997-1999**
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	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	1	0	3	3
30-34	0	1	1	6	6	6
35-39	0	2	2	10	11	6
40-44	1	2	4	15	4	4
45-49	5	3	2	14	10	13
50-54	3	0	0	13	7	8
55-59	1	1	1	16	12	10
60-64	2	2	1	19	7	10
65-69	2	2	1	13	15	12
70-74	1	2	2	17	17	16
75+	1	1	3	46	44	44
All ages	**16**	**16**	**18**	**169**	**136**	**132**
Ages 20-69 years	14	13	13	106	75	72

Notes

1. Deaths derived from place of usual residence and not place of death.
2. The number of deaths is presented as 3-year rolling blocks of data for the latter two time periods.
3. Only Western Australia, South 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 mortality rates for cervical cancer by age, by Indigenous and non-Indigenous status, WA, SA, NT, 1993-1995, 1996-1998 and 1997-1999

	Indigenous			Non-Indigenous		
Age group	**1993-1995**	**1996-1998**	**1997-1999**	**1993-1995**	**1996-1998**	**1997-1999**
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	0.0	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	0.0	5.3	0.0	0.8	0.8
30-34	0.0	6.2	6.0	1.5	1.6	1.6
35-39	0.0	15.1	14.6	2.6	2.7	1.5
40-44	11.1	18.7	35.9	4.1	1.0	1.0
45-49	71.1	38.9	24.9	4.3	2.8	3.6
50-54	61.1	0.0	0.0	5.3	2.4	2.6
55-59	23.4	23.9	23.4	7.7	5.3	4.3
60-64	62.2	56.7	28.1	10.0	3.6	5.1
65-69	88.3	80.3	39.2	7.0	8.1	6.5
70-74	73.4	131.1	127.6	10.2	9.8	9.2
75+	49.0	48.7	149.3	16.4	14.0	13.6
All ages						
AS rate (A)	27.7	25.6	29.0	4.6	3.4	3.2
95% CI	13.8-44.1	13.0-39.8	13.9-44.3	3.9-5.3	2.8-3.9	2.7-3.7
AS rate (W)	27.5	23.3	23.5	4.1	2.9	2.8
95% CI	14.1-42.5	12.5-36.1	12.1-35.0	3.5-4.8	2.4-3.4	2.3-3.4
Ages 20-69 years						
AS rate (A)	24.1	19.0	15.8	3.4	2.3	2.2
95% CI	11.9-37.6	9.0-31.2	6.8-24.6	2.8-4.1	1.8-2.9	1.7-2.7
AS rate (W)	25.1	18.5	15.3	3.5	2.3	2.2
95% CI	12.5-39.3	8.6-30.9	6.6-24.3	2.8-4.1	1.8-2.8	1.7-2.7

Notes

1. The age-standardised rates are presented as 3-year rolling blocks of data for the latter two time periods.
2. Deaths derived from place of usual residence and not place of death.
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 Western Australia, South 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 lining the cervix, which is the lower part of the womb or uterus where 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. Cervical cancer can be prevented with early treatment of these abnormalities. 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 screening indicators data sources

Indicator	Description	Data source
1	Participation rate for cervical screening	National Cervical Screening Program
2	Early rescreening	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 National Cancer Statistics Clearing House (ICD 180)	National Cancer Statistics Clearing House
6, 8	Incidence of squamous, adenocarcinoma, adeno-squamous and other cervical cancer (ICD 180)	National Cancer Statistics Clearing House
7, 9, 10	Mortality from cervical cancer (ICD9 180) For 1999 data (ICD10 C539)	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.

Cervical screening

Indicators 1-4 do not include data from Queensland because the cervical screening register in Queensland was not operational at the time of data processing. The incidence and mortality data used in Indicators 5-9 include Queensland.

Due to the difficulties of Indigenous identification, mortality data used in Indicator 10 are based on deaths in 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 does 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.

- The participation numbers for States and Territories other than WA and ACT, and the Australian totals, may be overestimated 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 mortality 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.

$$\text{Age-specific cervical cancer incidence rates in females aged 50-54} = \frac{\text{New cases 1997 aged 50-54 years}}{\text{1997 female population aged 50-54 years}} \times 100{,}000$$

$$= \frac{76}{536{,}230} \times 100{,}000$$

$$= 14.2 \text{ per } 100{,}000$$

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 Standard Population 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 nineteen chances in twenty 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[1] and World Standard Population[2]

Age group	World Standard Population (W)	Australian 1991 Standard Population (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
Total	**100,000**	**17,284,036**

Sources: 1. Australian Bureau of Statistics (1993); 2. Doll and Smith (1982).

Table D2: Hysterectomy fractions for women aged 18-80+ 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
Total	**84.3**

Source: Australian Bureau of Statistics 1995.

Table D3: Estimated resident female populations, by States and Territories, June 1998

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
0-4	211,964	151,230	118,238	61,590	46,451	15,566	10,462	8,599	624,234
5-9	216,598	156,623	122,769	64,891	48,262	16,882	10,785	8,227	645,215
10-14	212,926	154,468	121,554	66,277	49,492	17,415	10,863	7,568	640,736
15-19	211,691	156,110	122,923	64,859	48,307	16,804	11,724	6,801	639,297
20-24	219,602	167,409	126,100	67,118	49,190	15,037	13,223	7,940	665,691
25-29	246,280	186,409	136,225	71,206	53,605	16,466	13,292	9,531	733,145
30-34	237,843	180,162	128,250	69,463	53,750	16,601	12,265	8,436	706,925
35-39	253,091	185,703	137,485	73,996	58,855	18,924	12,781	7,923	748,913
40-44	235,756	174,788	128,226	70,927	55,553	17,901	12,324	7,007	702,629
45-49	216,581	161,284	119,578	64,508	53,063	16,475	12,174	5,783	649,539
50-54	192,250	142,523	105,601	53,595	47,242	14,574	9,998	4,445	570,287
55-59	147,772	108,537	78,235	40,092	35,929	11,424	6,505	2,646	431,183
60-64	129,092	95,392	63,813	33,488	31,816	9,980	4,771	1,754	370,123
65-69	123,457	90,160	59,496	30,121	30,876	9,500	3,946	1,136	348,707
70-74	117,664	86,057	55,247	26,908	30,802	8,806	3,614	806	329,909
75-79	95,504	69,353	44,979	21,587	25,717	7,403	2,866	513	267,923
80-84	64,393	46,276	30,230	14,665	17,197	5,165	1,752	316	180,000
85+	54,706	41,424	25,580	13,305	15,255	4,173	1,310	249	156,006
Total	**3,187,170**	**2,353,908**	**1,724,529**	**908,596**	**751,362**	**239,096**	**154,655**	**89,680**	**9,410,462**

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

Table D4: Estimated resident female populations, by States and Territories, June 1999

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
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	63,969	45,675	30,432	14,329	17,045	5,104	1,796	316	178,671
85+	57,752	43,539	27,214	14,152	16,105	4,430	1,431	276	164,903
Total	**3,217,476**	**2,379,459**	**1,751,734**	**922,298**	**754,515**	**238,827**	**155,244**	**90,828**	**9,511,856**

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/atypia		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 2 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 2 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 2 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.
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.	
Unsatisfactory	Repeat smear in 6–12 weeks, with treatment and where possible correction of any problems beforehand if appropriate.

Post-treatment assessment	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 2 consecutive normal smears at yearly intervals.
Special circumstances	
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.

ACT: Australian Capital Territory-a land-locked Territory of Australia situated within the State of New South Wales on the eastern seaboard with a population of 309,794 (1997). Its capital city is Canberra, which is also Australia's capital city.

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.

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

AS rate: age-standardised rate

Basement membrane: the delicate, noncellular 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 1 (mild dysplasia), CIN 2 (moderate dysplasia) and CIN 3 (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. It is difficult to anticipate which cases of CIN will regress or progress although a number of international studies have shown that 1% of CIN 1, 5% of CIN 2 and more than 12% of CIN 3 would progress to invasive cervical cancer (Jelfs 1995).

Colposcopy: a microscopic 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.

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

DHFS: Commonwealth Department of Health and Family Services (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.

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.

HPV: Human papilloma virus.

ICD-9: International Classification of Disease-a coding system used to identify the primary site of the malignancy. This classification is in its ninth 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: Not otherwise specified.

NSW: New South Wales-a State of Australia on the eastern seaboard which has the largest capital city in Australia, Sydney, and a population of 6,274,370 (1997).

NT: Northern Territory-a Territory in the north of Australia with a population of 187,132 (1997) and Darwin as its capital city.

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.

Qld: Queensland-a State in the north-east of Australia with a population of 3,401,232 (1997) and Brisbane as its capital city.

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.

SA: South Australia-a State in the southern part of Australia with a population of 1,479,806 (1997) and Adelaide as its capital city.

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.

Tas: Tasmania-an island State in the south-east of Australia with a population of 473,501 (1997) and Hobart as its capital city.

Vic: Victoria-a State in the south-east of Australia with a population of 4,605,148 (1997) and Melbourne as its capital city.

WA: Western Australia-the largest State in Australia, located in the west with a population of 1,798,129 (1997) and Perth as its capital city.

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