Cervical screening in Australia 1997–1998

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Cervical screening in Australia 1997–1998

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

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Contents

List of tables

List of figures

Preface

Cervical Screening in Australia 1997–1998 is the second national report for the National Cervical Program. The report is a joint project between the Australian Institute of Health and Welfare, the National Cervical Screening Program and the Commonwealth Department of Health and Aged Care.

The report provides information on key areas of the Program performance including participation in cervical screening programs, early rescreening, pre-cancerous abnormalities detected, incidence and mortality. In addition to updating information presented in the previous report, this report includes three new periodic indicators that broaden the scope of the report. These are incidence and mortality by location (rural, remote and metropolitan) and mortality by Indigenous status.

In the spirit of cooperation between agencies, State and Territory cervical screening programs have been involved in all steps of the report production. Individual members of the National Advisory Committee and others have commented on the draft of this report. The content of the report, however, remains the responsibility of the Australian Institute of Health and Welfare.

This publication will add substantially to the information available on cervical screening in Australia.

Richard Madden

Director

Australian Institute of Health and Welfare

Acknowledgments

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Summary

- Increasing participation in cervical screening is important in reducing the number of women who present with cervical cancer and the number that ultimately die from the disease. Participation rates of the target population (women aged 20 to 69 years) increased from 62% in 1996–1997 to 64% in 1997–1998.

- Overall, 2,721,650 women were screened for cervical abnormalities in the 1997–1998 period.

- When a woman has had an abnormal result from their Pap smear or when a woman has had one or more abnormal smears followed by a negative smear, repeat testing is recommended within a 2-year interval. The programs run efficiently if they comply with the recommended screening interval. In 1997–1998, 47% of women had one or more additional smear test following a negative smear.

- In 1997–1998, the cervical screening programs detected 10,704 women with high-grade abnormalities (CIN1/2, CIN 2, CIN 3 or adenocarcinoma in situ). This was much higher in the younger age groups: in the 20-29 age group the rate of CIN was over 14 per 1,000 women screened whereas it was less than 2 per 1,000 in women aged 50-69 years.

- There were 923 new cases of cervical cancer in Australia in 1996. Cervical cancer is one of the few cancers where screening can detect pre-cancerous lesions, thereby preventing a large proportion of these pre-cancerous lesions progressing to cancer.

- Cervical cancer is the 14th most common cause of cancer death in women, accounting for 269 deaths in 1998. The death rate from cervical cancer declined in all age groups between the years 1989 and 1998.

- In the period between 1995–1997 there were 19 deaths (an age-standardised death rate of 27.6 per 100,000 women) from cervical cancer among Indigenous women. This is over nine times more deaths than in the non-Indigenous women (3.0 per 100,000 women).

- Performance standards for laboratories that report Pap smears became mandatory from 1 July 1999 and now form part of the laboratory accreditation scheme.

- Recruitment campaigns using television advertising and print media were implemented between June and November 1998 and again in 1999. These campaigns are aimed at increasing the awareness of cervical screening among women, and the importance of screening at the recommended 2-yearly intervals.

National Cervical Screening Program

Screening to detect abnormalities of the cervix early has been available for Australian women since the 1960s. Until the early 1990s screening was largely opportunistic but, as in many other countries, it has become progressively more structured since that time. In 1995 the program became known as the National Cervical Screening Program.

Key elements of the more structured approach of the 1990s have included:

- the adoption of a national policy of a 2-year screening interval;
- recruitment programs to encourage high levels of participation by Australian women;
- special initiatives to promote high participation levels among underscreened groups including older women, women from culturally and linguistically diverse backgrounds, women from Aboriginal and Torres Strait Islander backgrounds, women of low socioeconomic status and women who live in rural and remote areas;
- the establishment of cervical cytology registries in all States and Territories. These registries promote the regular participation of women and the follow-up of women with abnormal Pap smears, assist with the accurate reporting of Pap smears by pathology laboratories and facilitate the evaluation and monitoring of the program; and
- the heightened awareness of the importance of the quality assurance cycle in a screening program, including the development of performance measures for laboratories that report Pap smears.

The National Cervical Screening Program has both national and State and Territory components. While policy is predominantly decided at a national level, coordination mainly occurs at a State and Territory level. A National Advisory Committee which includes representatives from the Commonwealth, the States and Territories and persons having expertise in areas of relevance to the Program (for example pathology, gynaecology, general practice, health economics and epidemiology) is supported by a secretariat based in Canberra. The National Advisory Committee meets twice each year, with much of the work of the Committee performed by the Policy and Cost Effectiveness, Quality Assurance, Recruitment, Education and Communication Working Groups and New Technologies.

In implementing the Program each State and Territory has established State coordination units with statewide responsibility for the Program. For example, in New South Wales a group located at Westmead Hospital has statewide responsibility for coordinating cervical screening on a contractual basis. Most States and Territories have program responsibilities held within their respective health departments.

During the current triennium, 1998 to 2000, the National Cervical Screening Program has determined that its main work areas will include the following:

- Review of policy

  Given that the National Cervical Screening Program is now mature, a substantial review of policy is planned during 1999–2000. Particular interest is centred on the appropriateness of the age range and the screening interval. To facilitate an evidence-based approach to the policy review, two areas have been identified for research in 1999: cost-effectiveness modelling of a variety of age ranges and screening intervals, and research into the factors that promote early re-screening.

- Improved quality assurance measures

  Performance standards for laboratories that report Pap smears were developed and pilot tested during the mid-1990s. The standards became mandatory from 1 July 1999 and form part of laboratory accreditation. The standards cover the profile of reports issued by the laboratory's, the positive predictive value of a cytology report of a high-grade intraepithelial lesion, the laboratory false negative rate among women with histologically confirmed carcinoma in situ, and the laboratory's turnaround time in processing smears.

  A project to assess and, if necessary, improve the standards of reporting of cervical histopathology has commenced. Given the large number of women who have cervical biopsies, it is considered important to maximise the quality of the reporting in this area.

- Further recruitment initiatives

  Between June and November 1998, the Commonwealth and States and Territories implemented a major recruitment campaign using television advertising, print media and initiatives aimed at raising the awareness of service providers about their role in encouraging women to be screened in conformity with the 2-yearly interval. A further campaign was implemented during mid-1999.

- Monitoring the role of new technologies

  The Australian Health Ministers' Advisory Council evaluation of new technologies was released in late 1998. Careful scrutiny by the New Technologies Working Group of the international research on emerging technologies is in progress. These technologies include fluid-based sampling, computer-assisted screening, human papilloma virus testing and other physical or chemical testing systems designed to detect pre-malignant lesions of the cervix.

  This second annual report of key performance indicators for the National Cervical Screening Program is particularly welcomed. It provides an important resource for policy formation and review, to assist in comparison with programs in other countries, and as a means of promoting due accountability to the community, to health professionals and to Government.

Dr Heather Mitchell
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National Cervical Screening Program

Cervical screening

In 1986 the World Health Organization and the International Agency for Research on Cancer published guidelines outlining essential features of cervical cancer screening programs. These guidelines were subsequently used as a 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 Australian Health Ministers' Advisory Council (AHMAC).

The evaluation found that, because of the fragmented approach to the provision of cervical screening services over a 25-year period, there were deficiencies in the delivery and outcomes of the services. For instance, there was no agreement on the age group of women to be screened or the interval between screens, no fail-safe system for women with abnormal Pap smears and no formal system to monitor the status of treated women (AHMAC 1991). 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 recommendation is for all women who have been sexually active at any stage in their lives to have a Pap smear every 2 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

States and Territories actively recruit women in the target 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 re-screening, 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 registers.

Cervical cytology registers

Cervical cytology registers operate in all States and Territories, maintaining 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 there is an opt-off option. Doctors or health workers are required to advise women about information sent to the cervical cytology register.

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-off, 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.

Reminders

A Pap smear is assessed by a cytologist. Where the cytologist finds no abnormal cells and the report is negative, the national screening policy recommends a repeat smear in 2 years. A reminder notice is sent to women if they have not attended for screening after 2 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 to assist women in being notified of the abnormality and the recommended course of action. In some instances doctors and laboratories send out reminder notices based on results from previous Pap smears.

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

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 health interventions might have in preventing or reducing deaths. While indicators can be used in the evaluation of screening or other health interventions, they typically relate to the impact 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, low- and high-grade abnormality detection, incidence and mortality. These indicators have been endorsed by the National Screening Information Advisory Group, by State and Territory cervical screening programs and by the National Advisory Committee. On the following pages an overview is presented of each indicator's intention, application and definition. This is supported with data indicating the current status and trend of the indicator. In this section of the report 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 rate 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 invasive squamous, adenocarcinoma, adeno-squamous and other cervical cancer

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

Indicator 7: Mortality

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

Periodic indicators

In addition to the indicators from the 1996–1997 report (Indicators 1–7), three new indicators have been added for performance monitoring. These are periodic incidence and mortality indicators stratified by location (Indicators 8 and 9), and a periodic mortality indicator stratified by Indigenous status (Indicator 10). The periodic indicators have been developed to report on issues that are of importance in monitoring the outcomes of the cervical screening program over a long period of time. The 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 here are periodic rolling blocks of 3-yearly data, for example, 1993–1995, 1994–1996, 1995–1997.

Periodic incidence and mortality indicators by location

Indicator 8: Incidence by location

Incidence rate of cervical cancer per 100,000 estimated resident female population in a 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

Death 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).

The periodic indicators have been developed to examine the proposition that there is a difference in the availability and take-up of screening services between urban and rural areas. Information for these indicators is based on population-based data rather than screening data.

Usual place of residence information is available as part of incidence and mortality data collections.

Postcode and statistical local area information for incidence and mortality is routinely collected at the point of diagnosis or death, and these data have been classified into urban rural and remote groups 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.

Indigenous status mortality indicator

Indicator 10: Indigenous mortality

Death rate 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).

In early 1996 the AHMAC commissioned the Australian Institute of Health and Welfare (the Institute) in conjunction with stakeholders to conduct a review of, and develop a national plan to improve the reporting of Aboriginal and Torres Strait Islander health information. In October 1997, the report *The Aboriginal and Torres Strait Islander Health Information Plan–this time let's make it happen* brought together recommendations from a diverse range of stakeholders and users.

One of the recommendations was that Commonwealth, State and Territory Governments routinely publish information about Indigenous health status and the performance of their programs and services (AHMAC & AIHW 1997). The Institute seeks to address this recommendation by including Indigenous status as one of its periodic indicators. The 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 is 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 deaths in the registration of deaths. Therefore, mortality data from these States and Territory only are analysed in this report.

Participation

Increasing participation in cervical screening is seen as the major challenge in reducing the number of women who present with cervical cancer, and ultimately the number of women who die from this disease. Women in the 20–69 years age group are actively targeted by a variety of recruitment initiatives. The recommended screening interval for women in the target age group 20–69 years who have ever been sexually active at any stage in their lives is 2 years. Pap smears may cease at the age of 70 years for women who have had two normal Pap smears within the last five years. Women over 70 years who have never had a Pap smear, or who request a Pap smear, should be screened.

To achieve uniformly high population coverage it is necessary to target particular subgroups, such as older women, Indigenous women and women from non-English-speaking backgrounds.

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 had sexual intercourse, and women with a previously diagnosed gynaecological cancer (this last group is monitored under a clinical arrangement) (Snider & Beauvais 1998).

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

- The participation indicator measures the proportion of the target population covered by the cervical screening program.
- This indicator is important in assessing the contribution of the 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.
- When this indicator is used in conjunction with others, it can be used to support debate relating to target groups and screening intervals.

State-and Territory-specific issues

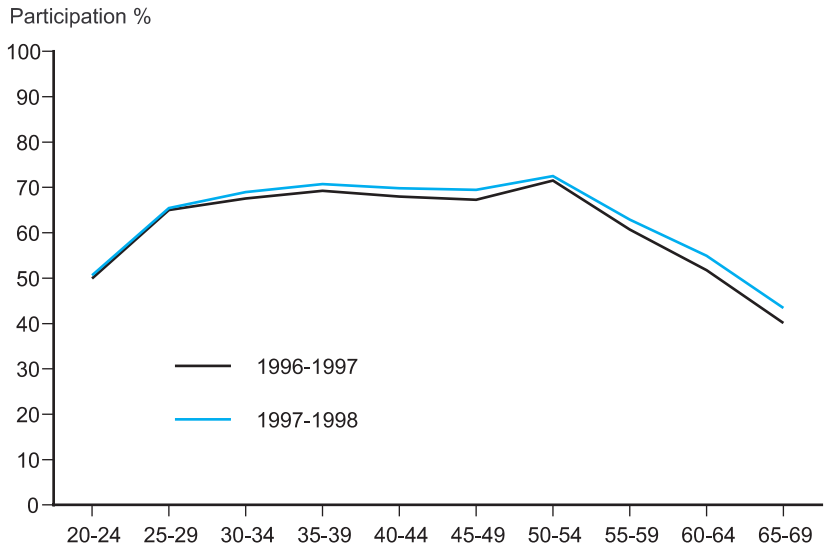
The Queensland Health Pap Smear Register did not begin operation until February 1999. Therefore, participation data are not included for this jurisdiction, and rates for the other States and Territories for this indicator have been calculated excluding the Queensland population for the respective years.

The NSW Pap Test Register recently identified that two laboratories in NSW had not been reporting Pap test data for women aged 70 years and over. The Register calculates that the number of NSW women aged 70 years and over who were screened in 1997-1998 is underestimated by approximately 10 per cent.

The Northern Territory screening participation rates in this report may differ from those published by the Northern Territory Pap Smear Register for the following reason. Although the female Aboriginal population in the Northern Territory in 1996 comprised 23% of the total female population aged 20–69 years, the Northern Territory Pap smear register excludes Aboriginal women from the denominator when adjusting for the percentage of women who have had a hysterectomy. The Northern Territory Cervical Screening program indicates that this is because there is anecdotal evidence to suggest that Aboriginal women have lower rates of hysterectomy. This report includes all women in the denominator in order to maintain national consistency.

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).



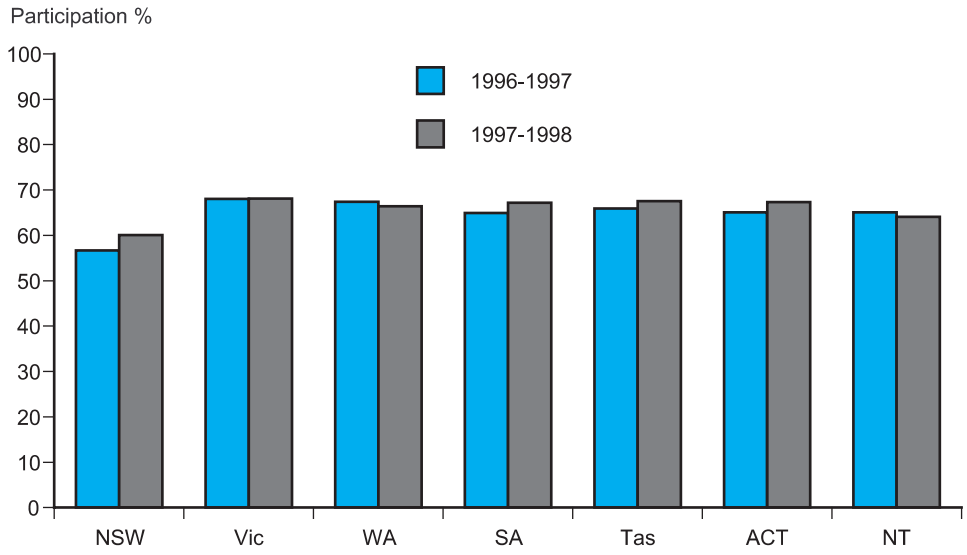
Refer to Tables A2a and A2b.

Notes: (1) Participation rates have been adjusted for the estimated proportion of women who have had a hysterectomy by age.

(2) The Queensland Health Pap Smear Register commenced February 1999; therefore no data are available for this report.

Figure 1: Participation rates in National Cervical Screening Program by age group, Australia, 1997–1998

- The participation rate for cervical cancer screening (excluding Queensland) for the period January 1997 to December 1998 was 63.9% for the target population of women aged 20–69 years (Table A2b).
- During this period 2,721,650 women were screened in Australia for pre-cancerous changes to cervical cells. Of these 2,653,504 (97%) were in the target age group 20–69 years of age (Table A1b).
- There was considerable variation in the rate of participation of different age groups within the target age group, ranging from a peak of 72.5% participation in the 50–54 years age group to a low of 43.4% in the 65–69 years age group (Table A2b).
- There was a small but consistent increase in the participation rate in all 5-year age groups within the target age group between the two periods 1996–1997 (62.4%) and 1997–1998 (63.9%). This resulted in 90,396 more women being screened in the latter period. During the same period, participation of women in the 60–69 years age group had the largest increase of approximately 8% (Tables A1a to A2b)



Refer to Tables A2a and A2b.

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

Figure 2: Participation in the National Cervical Screening Program by women aged 20–69 years, by State and Territory, 1996–1997 and 1997–1998

- The participation rates are based on all women who were screened in that State or Territory. New South Wales, Victoria, 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 1997–1998 (1.4% of all Pap smears).
- 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 68.1% in Victoria to a low of 60.1% in New South Wales in 1997–1998 (Table A2b).
- The participation rate in most States and Territories increased between the two periods 1996–1997 and 1997–1998. New South Wales registered the largest percentage increase between the two periods (6.0%). Nationally, there was an increased participation rate of 2.4% (Tables A2a and A2b).

Early rescreening

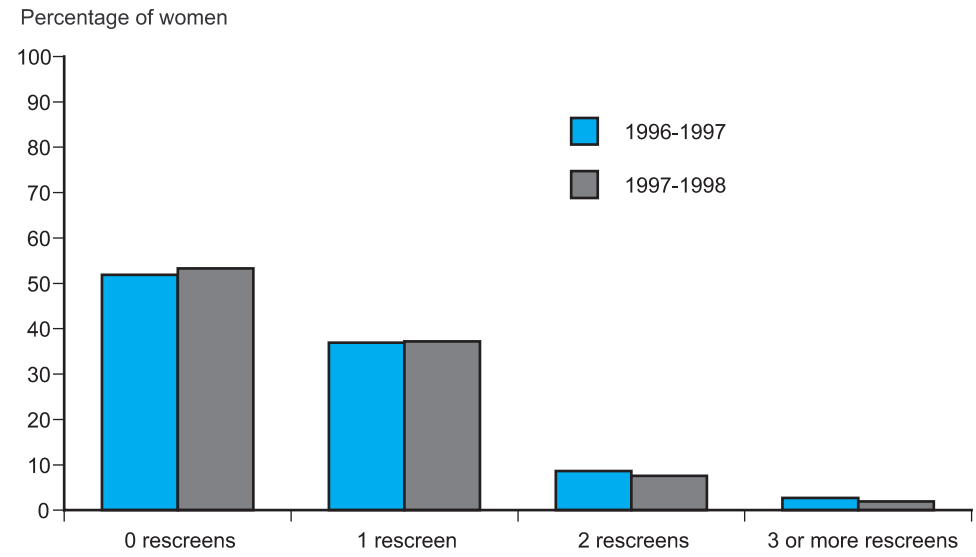
The National Cervical Screening Program seeks to maximise reductions in incidence and mortality given available resources. The design of the screening program defines two key parameters to achieve these objectives—target populations and screening intervals. Compliance with these parameters is crucial in maintaining the effectiveness of the program and in measuring cost efficiency in order that resources may be used to increase population coverage. Where women have an abnormal result (e.g. cervical intraepithelial neoplasia (CIN) from their Pap smear, repeat testing is recommended within the 2-year interval. Another example of when rescreening may legitimately be recommended is when a women has had one or more abnormal smears followed by a negative smear.

This indicator:

- measures the compliance with the recommended screening interval following a negative smear, and the range of screening practices around it; and
- is important in assessing screening coverage around the recommended interval, as significant differences may reduce program effectiveness.

Indicator 2: Early rescreening

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

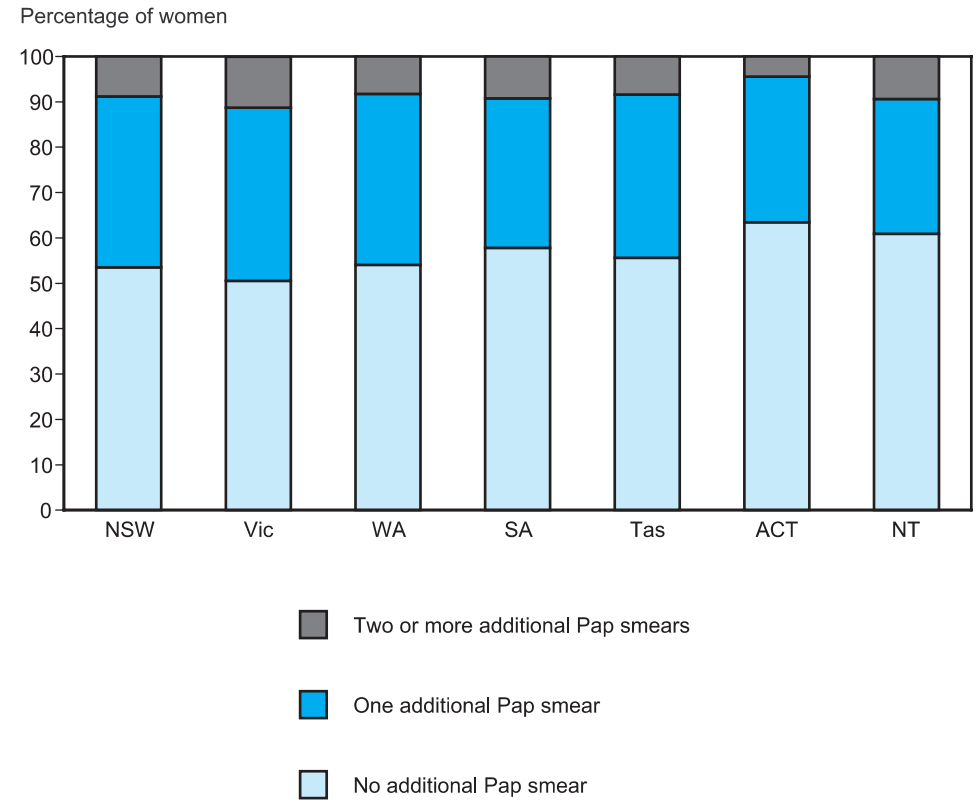


Refer to Table A4.

Notes: (1) The reference period for this indicator was the 24 months following February 1996 and 1997. (2) The Queensland Health Pap Smear Register commenced February 1999; therefore no data are available for this report.

Figure 3: Proportion of women rescreened by number of rescreens during the 24-month period following a negative smear in February 1996 and 1997, Australia

- A cohort of 143,722 women from all States and Territories, except Queensland, who had a negative smear result in February 1997 was tracked during a period of 24 months to determine the extent of early rescreening within the National Cervical Screening 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 less women take holidays at this time (Table A3).
- Approximately 53% of women who had a Pap smear in February 1997 were not rescreened in the following 2 years. However, 37% of all screened women had one additional smear, 8% had two additional smears, and less than 2% had three or more additional smears (Table A4).
- Overall, the percentage of women who did not have any additional smears following a negative smear increased by 2.7% between 1996-1997 (51.9%) and 1997-1998 (53.3%). Between these two periods, there was a substantial decline in the proportion of women who had additional smears. The percentage of women who had two additional smears in 1997-1998 period declined by 11.6% while the percentage of women who had three or more smears declined by 29.6%. There was a less than one per cent (0.8%) increase in the proportion of women who had one additional smear following a negative smear between the two periods 1996-1997 and 1997-1998 (Table A4).



Refer to Table A4.

Notes: (1) The reference period for this indicator was the 24 months following February 1997. (2) The Queensland Health Pap Smear Register commenced February 1999; therefore no data are available for this report.

Figure 4: Proportion of women screened by number of rescreens during the 24-month period following a negative smear in February 1997, by State and Territory

- There was some variation in the proportion of early rescreens by State and Territory. More than 60% of women from the Australian Capital Territory and the Northern Territory, who had a negative screen in February 1997, had no further screens in the following 24 months. The percentage of women who had one repeat smear ranged from 29.7% (Northern Territory) to 38.2% (Victoria) (Table A4).
- Over 11% of women had two or more repeat screens in Victoria, while in the remaining States and Territories this was less than 10%.
- There was some variation between States and Territories. For example, in Victoria, South Australia and the Northern Territory around 9% of women who had a negative screen in February 1997 had two or more additional screens during the following 24-month period. In the Australian Capital Territory, in contrast, only 4.5% had two or more additional screens in the 24 months following a negative smear (Table A4).

Low-grade abnormalities

The Pap smear test is able to identify a range of abnormalities in cells lining the cervix. Some of these cells (high grade) have a strong chance of becoming malignant, and are therefore treated aggressively. The chances of low-grade abnormalities showing malignant change is significantly less, and therefore investigation and treatment in the same manner as high-grade abnormality is not required.

In this report a low-grade intraepithelial abnormality includes:

- atypia;
- warty atypia (human papilloma virus (HPV) effect);
- possible CIN (*see* glossary);
- equivocal CIN;
- CIN 1; or
- endocervical dysplasia not otherwise specified (NOS).

The rationale behind this indicator is to provide a broad indication about the extent of morbidity caused to women taking part in the screening program, and in particular data about the number of women who have a biopsy. A biopsy is an invasive procedure in which a piece of tissue is taken from the cervix, and represents a significant event for a woman compared with having a Pap smear.

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

State-and Territory-specific issues

During the first half of 1998 the Tasmanian Pap Smear Register noted an increase in the percentage of smears reported as abnormal. Subsequently, all degrees of abnormality (excluding HPV) increased and were broadly confirmed by increased abnormalities reported on histology. Although CIN 2 and CIN 3 showed significant increases, the biggest increase was in CIN 1. The proportion of all non-specialist smears reported as CIN 1 approximately doubled during this period. Laboratories confirmed that the increase in reports of abnormal smears was not due to a change in laboratory methods. During the latter part of 1998 reported abnormalities are more like those of previous levels. The Tasmanian Pap Smear Register has investigated possible reasons for the increase in abnormal smears, and to date has found no plausible explanation.

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 A5a and A5b.

Notes: (1) The ACT did not collect histology details during this period, therefore no data are available for this indicator. (2) The Queensland Health Pap Smear Register commenced February 1999; therefore no data are available for this report.

Figure 5: Ratio of low- to high-grade abnormalities by women aged 20–69 years, by State and Territory, 1997 and 1998

- The ratio of histologically confirmed low-grade abnormalities to high-grade abnormalities was 1.35 for Australia in 1998, a reduction on the ratio for 1997 which was 1.47 (Tables A5a and A5b).
- Both these ratios do not include data from Queensland and the Australian Capital Territory because the Queensland Health Pap Smear Register was not operational in the two time periods, and the Australian Capital Territory did not routinely collect histology data during these periods.
- In 1998 there was some variation between States and the Northern Territory with the highest rates evident in New South Wales and Western Australia (1.5), followed by South Australia and Tasmania (1.4), while Victoria (1.1) and the Northern Territory (0.9) had the lowest ratios (Table A5b).
- There were small shifts in the interstate ratio of low-grade intraepithelial abnormalities to high-grade intraepithelial abnormalities detected between 1997 and 1998 within States and the Northern Territory. The ratios in New South Wales, Western Australia, South Australia and the Northern Territory declined, while there was a small increase in the ratio in Victoria and Tasmania (Tables A5a and A5b).

High-grade abnormalities

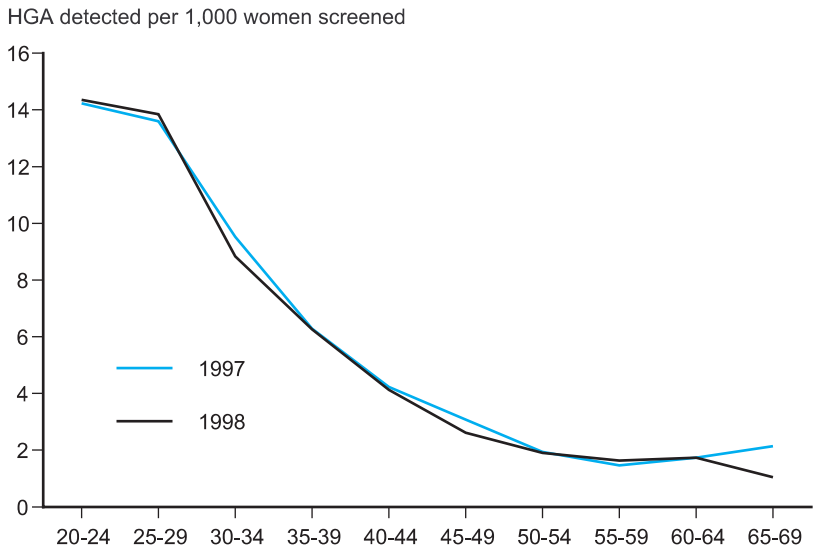
High-grade lesions have a greater probability of progressing to invasive cancer than low-grade lesions. Therefore one of the aims of the National Cervical Screening Program is to set a screening interval which detects most of these lesions before they progress and become invasive. This indicator measures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

The National Health and Medical Research Council has produced guidelines distributed by the National Cervical Screening Program to assist in the management of women who have low- and high-grade intraepithelial abnormalities. The National Health and Medical Research Council guidelines also highlight the need for follow-up after confirmation of a CIN lesion primarily because of the greater risk of developing invasive cancer (DHSH 1994b).

The recommended management of CIN 2 and CIN 3 is treatment by a gynaecologist with appropriate expertise. Management varies if an abnormality is found during pregnancy; the recommended management then is to refer for colposcopy during the first trimester to initially exclude invasive disease. If a high-grade abnormality is confirmed it is recommended that a colposcopy be repeated during mid-trimester to exclude progression, and the lesion should be reassessed at 8 weeks post-partum (DHSH 1994b). It is also recommended that women who have had a hysterectomy and who have a past history of CIN should continue to have smears taken at least yearly. If a lesion is completely excised at hysterectomy the woman should continue to have smears taken from the vaginal vault annually for 5 years, and 2-yearly thereafter (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).



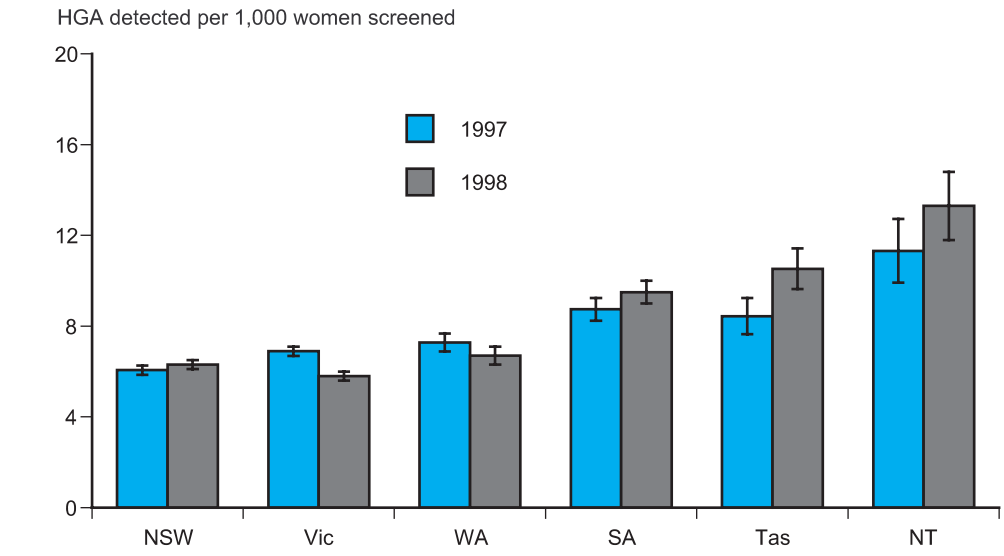
Refer to Tables A8a and A8b.

Notes: (1) The ACT did not collect histology details during this period, therefore no data are available for this indicator. (2) The Queensland Health Pap Smear Register commenced February 1999; therefore no data are available for this report.

Figure 6: High-grade abnormalities per 1,000 women by age group, Australia, 1997 and 1998

- The age-standardised detection rate for histologically verified high-grade intraepithelial abnormalities declined from 6.9 per 1,000 women screened in the target age group 20–69 years in 1997 to 6.7 per 1,000 women screened in 1998 (Tables A9a and A9b).
- This indicator does not include data from Queensland and the Australian Capital Territory because the Queensland Health Pap Smear Register was not operational in the two time periods represented, and the Australian Capital Territory did not routinely collect histology data during these periods.
- In 1998, 10,704 histologically verified high-grade abnormalities were detected in 1,557,556 women screened in the target age group 20–69 years in Australia (0.7%) (Tablea A6b and A7b).
- Figure 6 shows that the rate of histologically verified high-grade intraepithelial abnormalities was much higher in the younger age groups. In the 20–29-year age group the rate was more than 13.9 per 1,000 women screened compared with less than 2 per 1,000 in women aged 50–69 years. This age-specific distribution contrasts with patterns of cervical cancer incidence and mortality that are the inverse of this age distribution, suggesting that the malignant potential of an intraepithelial high-grade abnormality is greater with increasing age. It is not ethically acceptable to observe the malignant potential for women with high-grade intraepthelial abnormalities; however, data from

the National Women's Hospital in New Zealand found evidence in this regard (McInroe et al. 1984).



Refer to Tables A9a and A9b.

Notes: (1) The ACT did not collect histology details during this period, therefore no data are available for this indicator. (2) The Queensland Health Pap Test Register commenced in February 1999; therefore no data are available for this report.

Figure 7: Age-standardised rate of high-grade abnormalities per 1,000 women screened aged 20–69 years, by State and Territory, 1997 and 1998

- In 1997 and 1998 there was considerable variation in the State and Territory age-standardised rate of high-grade abnormalities per 1,000 women screened. In 1998, Northern Territory had the highest rate at 13.3 per 1,000 women screened, and Victoria the lowest at 5.8 for women in the target age group 20–69 years (Tables A9a and A9b).
- The age-standardised rate of high-grade abnormalities per 1,000 women increased in New South Wales (from 6.1 to 6.3), South Australia (from 8.8 to 9.5), Tasmania (8.5 to 10.5) and Northern Territory (11.3 to 13.3) between 1997 and 1998. However, only Tasmania's increase was statistically significant.
- Statistically significant decline in the age-standardised rate of high-grade abnormalities per 1,000 women was observed in Victoria (6.9 to 5.8) between 1997 and 1998. During the same period, Western Australia also showed a decrease (from 7.3 to 6.7) however, the decline was not statistically significant (Tables A9a and A9b).

Incidence

The major objective of the National Cervical Screening Program is to minimise the incidence of cervical cancer by detecting treatable pre-cancerous lesions before their progression to cancer. However, where these pre-cancerous lesions cannot be detected, diagnosis of cancer at its earliest stage, the micro-invasive stage, is the best alternative. The next two indicators measure the incidence rates of micro-invasive and all cervical cancers in the community. These indicators provide information for formulating policy and allocating resources to deal with the disease. The indicators also provide information on the impact of screening on the disease.

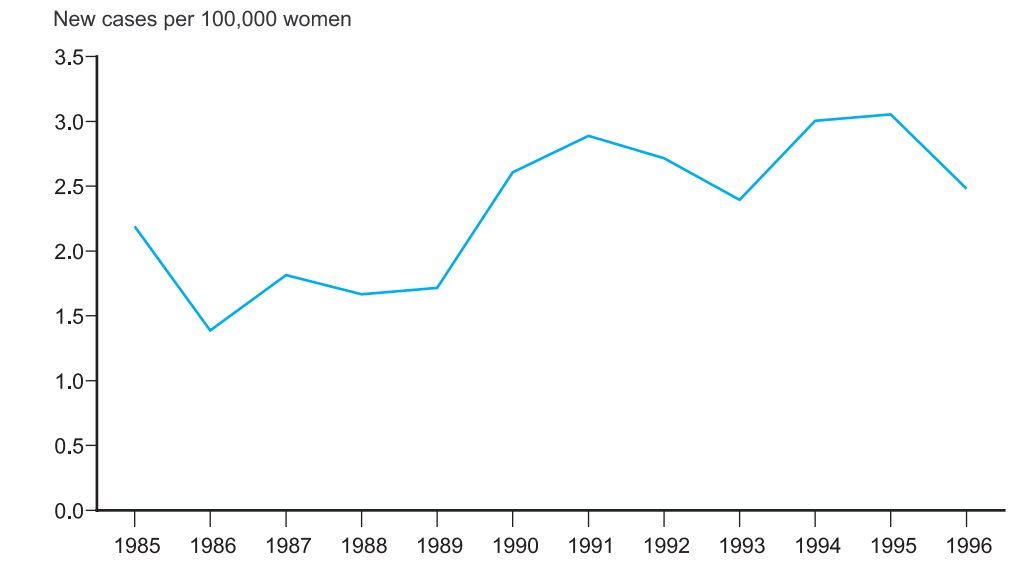
In 1994 the International Federation of Gynaecology and Obstetrics endorsed the following definition of micro-invasive carcinoma of the cervix:

> 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).

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

Indicator 5: Incidence of micro-invasive cervical cancer

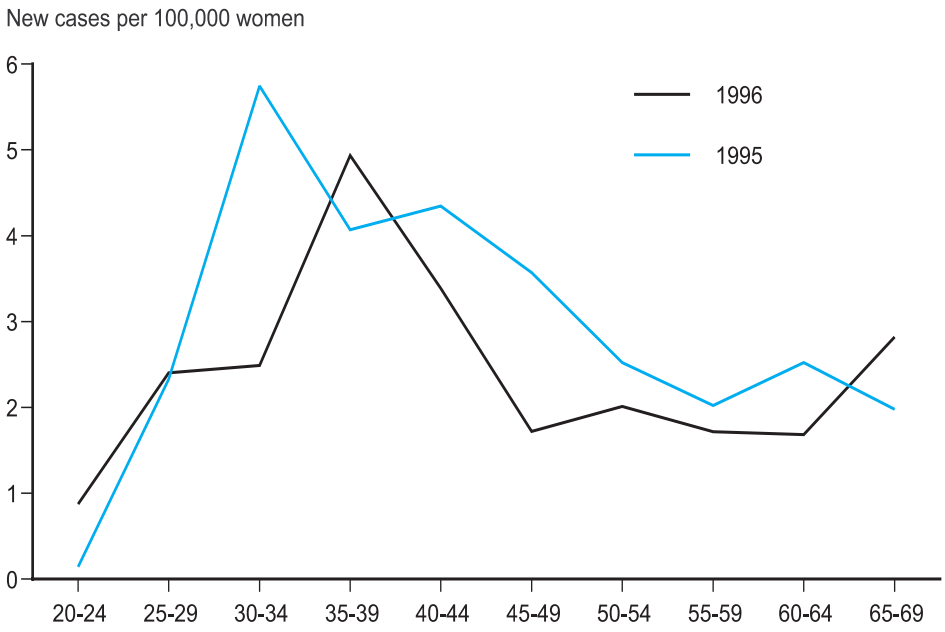
Incidence rate of micro-invasive cervical cancer per 100,000 estimated resident female population in a 12-month period by 5-year age groups (20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84, 85+) and for the target age group (20–69 years—age-standardised).



Refer to Table A11.

Figure 8: Age-standardised incidence rates for micro-invasive squamous cell cancer, women aged 20–69 years Australia 1985–1996

- The age-standardised incidence rate of micro-invasive cervical cancer was 1.6 per 100,000 for all women in 1996, and 2.5 per 100,000 for the target age group 20–69 years (Table A11).
- In 1996 there were 151 new cases of micro-invasive cervical cancer among women of all ages, and for the target age group 20–69 years there were 144 new cases (Table A10).
- The age-standardised incidence rate for micro-invasive squamous cell carcinoma of the cervix has fluctuated during the period 1985–1996, but, in general, has continued to show an upward trend. The increase in micro-invasive squamous cell carcinoma is a positive one as long as it is offset by a decline in later stage cancers (Table A11).



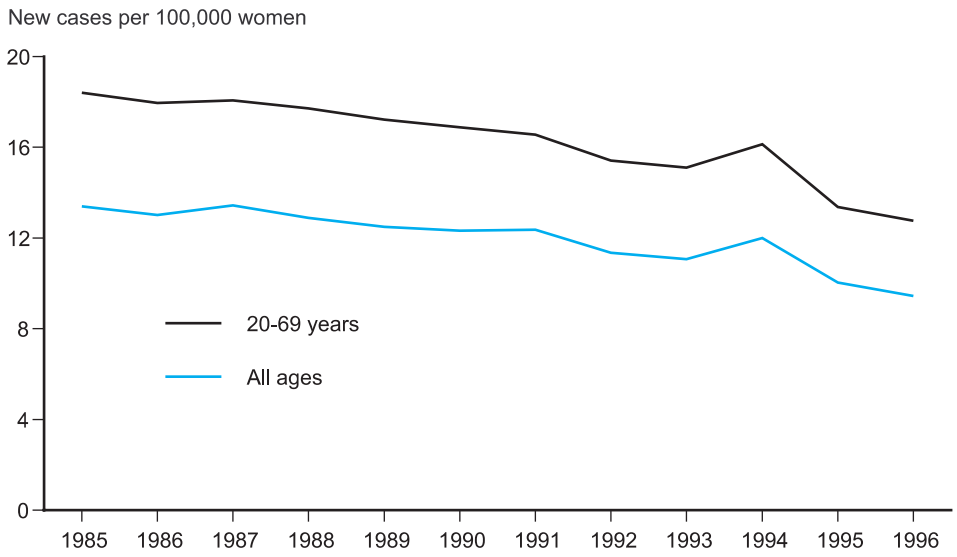
Refer to Table A11.

Figure 9: Age-specific incidence rates of micro-invasive squamous cell cancer, women aged 20-69 years, Australia, 1995 and 1996

- In 1996, women in the 35–39 years age group had the highest rate of micro-invasive squamous cell cancer at 4.9 per 100,000 women, whereas in 1995 women in the 30–34 years age group had the highest incidence. The rate declined with age until the 60–64 years age group (1.7 per 100,000 women). The increase in rate for women in the 65–69 years age group reflects the relatively small number of cases in this age group (10 cases) (Table A11).
- In 1996, there were 36 cases of micro-invasive squamous cell cervical cancer in women aged 35–39 years. The number of cancers declined to 10 or less for women in their sixties (Table A10).

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

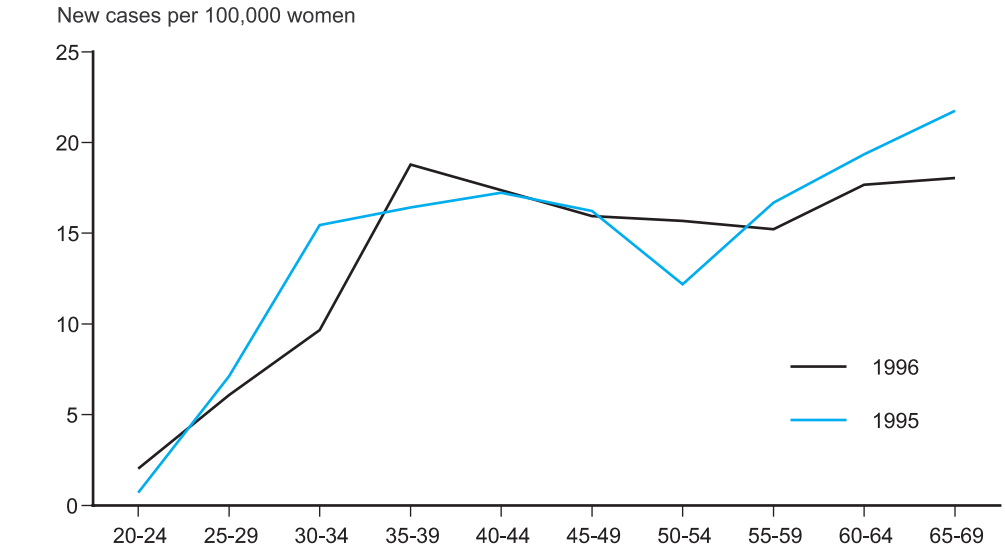
Incidence rate of squamous, adenocarcinoma, adeno-squamous and other cervical cancer per 100,000 estimated resident female population in a 12-month period by 5-year age groups (20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84, 85+) and for the target age group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



Refer to Table A13.

Figure 10: Age-standardised incidence rates of cervical cancer, Australia, 1985–1996

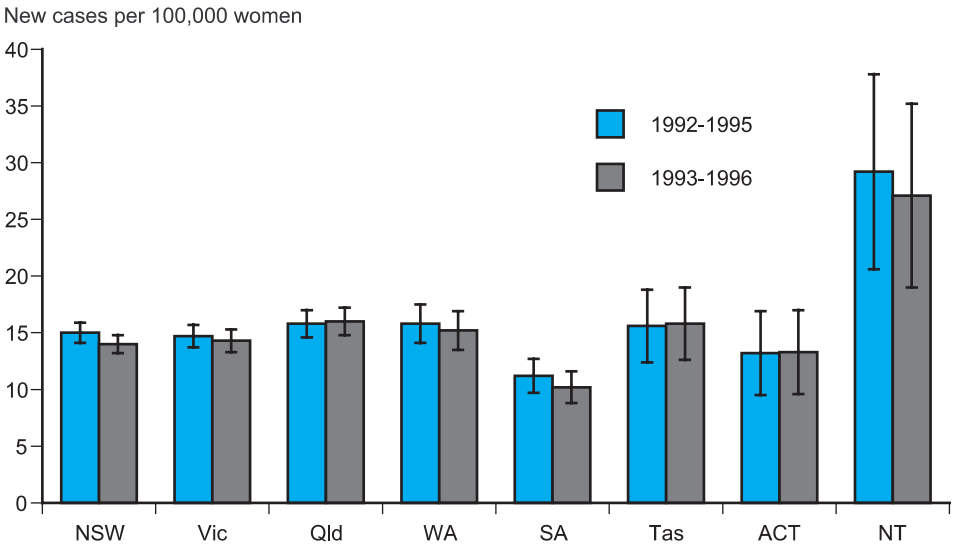
- In 1996, the incidence rate of all cervical cancers declined to 9.4 per 100,000 for all women in Australia, and 12.8 per 100,000 for the target group (Table A13).
- In 1996, cervical cancer was the ninth most frequently diagnosed new cancer. There were 923 new cases of cervical cancer diagnosed in Australia in 1996, of these 751 were women in the target age group 20–69 years (Table A12).
- Between 1985 and 1996 the age-standardised incidence rate for cervical cancer for women of all ages declined by more than 29%, and for the target age group by nearly 31% (Table A13).



Refer to Table A13.

Figure 11: Age-specific incidence rates for cervical cancer, Australia, 1995 and 1996

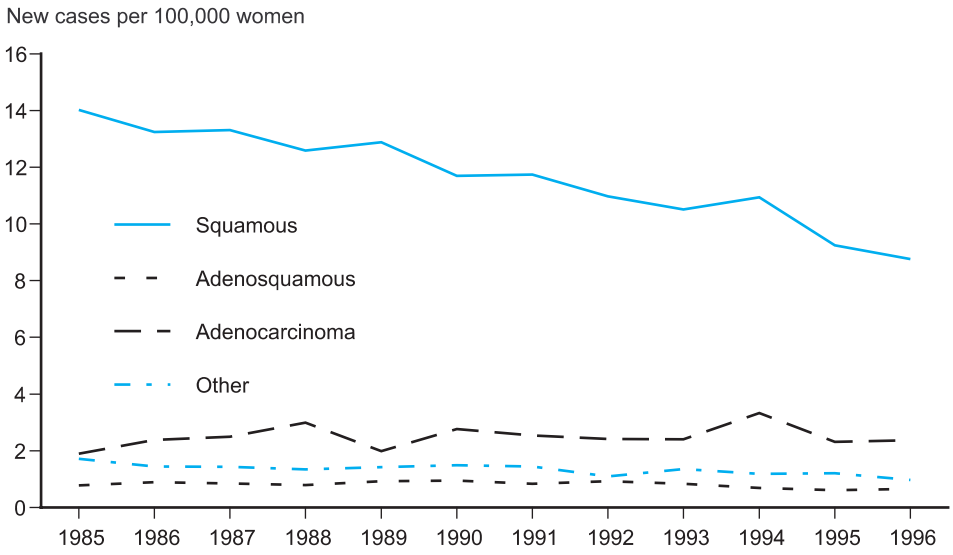
- The age-specific rate of cervical cancer differs from most other cancers in that it rises rapidly in women in the young age groups; in 1996 the age-specific rate for women aged 35–39 years was 18.8 per 100,000 women. From that age, the rate declines slightly until the age group 55–59, after which it shows an upward trend.



Refer to Table A15.

Figure 12: Age-standardised cervical cancer incidence rate by women aged 20–69 years, by State and Territory, 1992–1995 and 1993–1996

- There was a considerable range in cervical cancer incidence between States and Territories for women aged 20–69 years. In the period 1993–1996 South Australia had the lowest incidence at 10.2 per 100,000 women compared with the Northern Territory which had the highest rate of 27.1 per 100,000 women. However, only Northern Territory was significantly different from the other States and the Australian Capitol Territory (Table A15).
- There was a decrease in the incidence rate of cervical cancer in New South Wales (6.6%), Victoria (2.7%), South Australia (8.9%) and the Northern Territory (7.2%) between the two periods 1992–1995 (see AIHW 1998a) and 1993–1996 (Table A15).



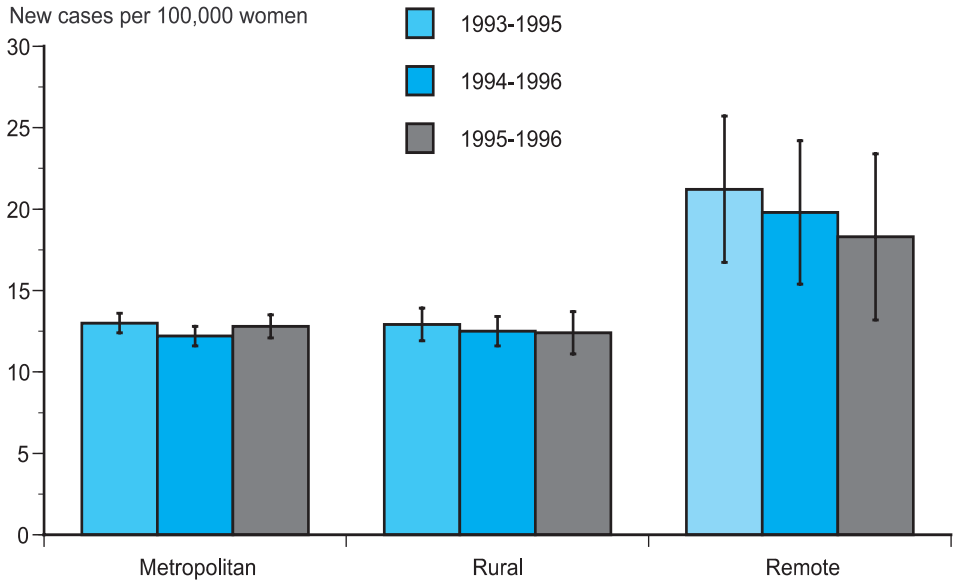
Refer to Table A17.

Figure 13: Age-standardised incidence rates for cervical cancer by histological type by women aged 20–69 years, Australia, 1985–1996

- There are several forms of cervical cancer. The greatest proportion of cervical cancers are squamous cell carcinomas and adenocarcinormas or combination of these.
- In 1996, squamous cell carcinomas of the cervix accounted for approximately 68.6% of all cervical cancers, adenocarcinomas 18.6%, adeno-squamous 5.2% and a range of other mixed and unknown histologies comprised the remaining 7.6% (Table A16).
- 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 II (moderate dysplasia) and CIN III (severe dysplasia and carcinoma in situ). CIN usually occurs at least a decade before cervical cancer. If CIN remains untreated, some women will develop cervical cancer while others will progress to invasive cervical cancer, despite treatment (Jelfs 1995).
- Because of the high risk associated with squamous cell carcinoma of the cervix , the National Cervical Screening Program aims to detect this type of cancer early.

Indicator 8: Incidence by location

Incidence rate 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).



Refer to Table A19

Notes: (1) The age-standardised rates are presented as 3-year rolling blocks of data for the periods 1993–1995, 1994–1996, and 2-yearly for the period 1995–1996. These years were selected to be comprable 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.

Figure 14: Age-standardised incidence rates for cervical cancer by location by women aged 20–69 years, Australia, 1993–1996

- In the 2-year period 1995–1996 there were 1,334 new cases (72% of all new cases) of cervical cancer in metropolitan locations, 453 new cases (25% of all new cases) in rural locations and 58 new cases (3% of all new cases) in remote locations (Table A18).
- The age-standardised cervical cancer incidence rate for women in the target age group 20–69 years was highest in remote locations (18.3 per 100,000 women) in the period 1995–1996. During the same period the rate for cervical cancer deaths in metropolitan and rural locations were 12.8 and 12.4 per 100,000 women (Table A19).
- There was no significant change in the age-standardised incidence rate of cervical cancer between the periods 1994–1996 and 1995–1996 in all three locations.
- The higher rate in remote location probably reflects to a large extent the relatively high proportion of Indigenous women in this location.

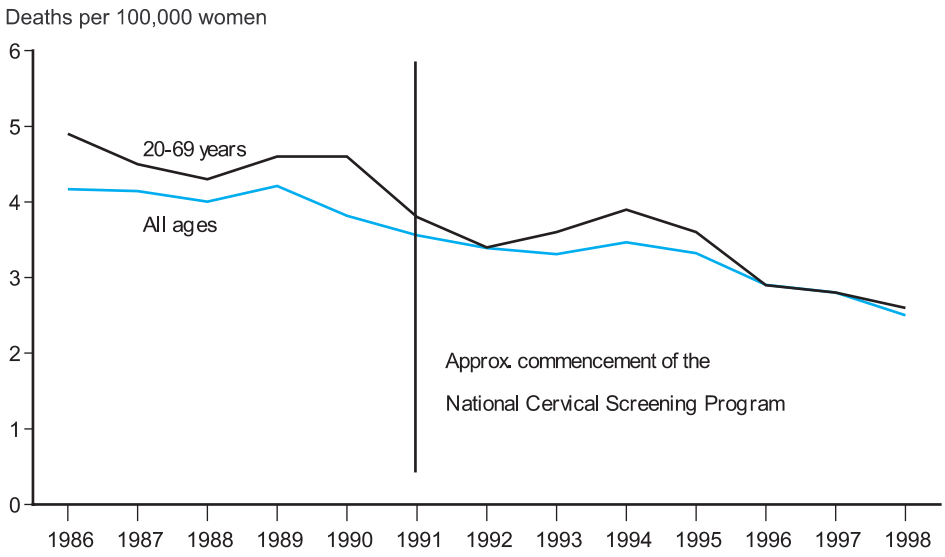
Mortality

Cancer of the cervix is one of the few cancers for which there is an efficacious screening test for detection of the disease at an early 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.

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

Indicator 7: Mortality

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



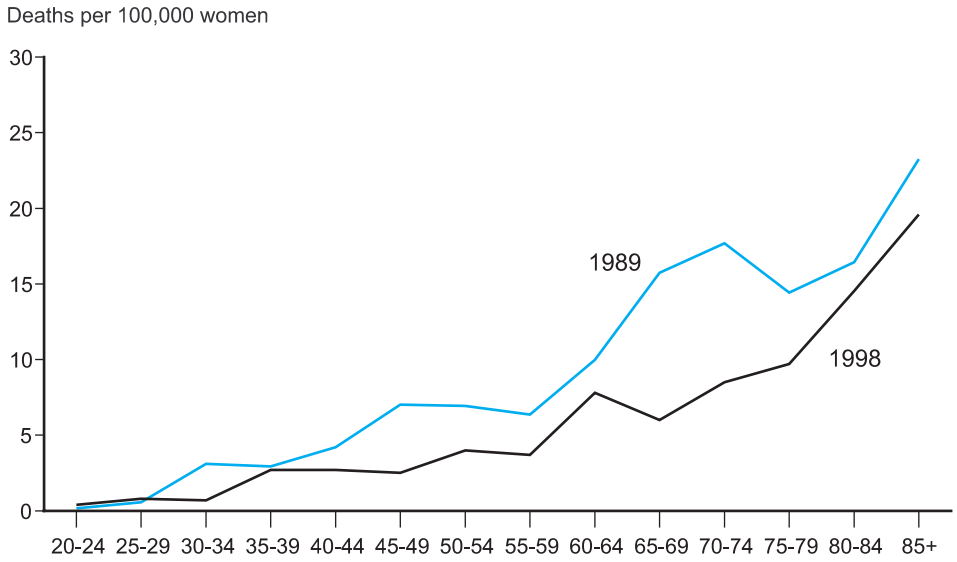
Refer to Table A21.

Notes: (1) Mortality data from 1986–1996 based on year of death and 1997–1998 based on year of registration.

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

Figure 15: Age-standardised death rates from cervical cancer, Australia, 1986–1998

- Cervical cancer is the 14th most common cause of cancer death in women, accounting for 269 deaths in 1998. The age-standardised mortality rate for all ages was 2.5 per 100,000 women in 1998. Mortality from cervical cancer has been declining over time, and between 1986 and 1998 the age-standardised cervical cancer death rate declined by 40% (Table A21).
- In the target age group (women aged 20–69), mortality rates have declined at approximately the same rate as those for all ages from 4.9 per 100,000 women in 1986 to 2.6 per 100,000 women in 1998 (Table A21).
- The death rate from cervical cancer declined in most age groups between the years 1991 and 1998, in particular in the 30–34 age group (65%), and in the 45–49 age group (54%) (Table A21)..

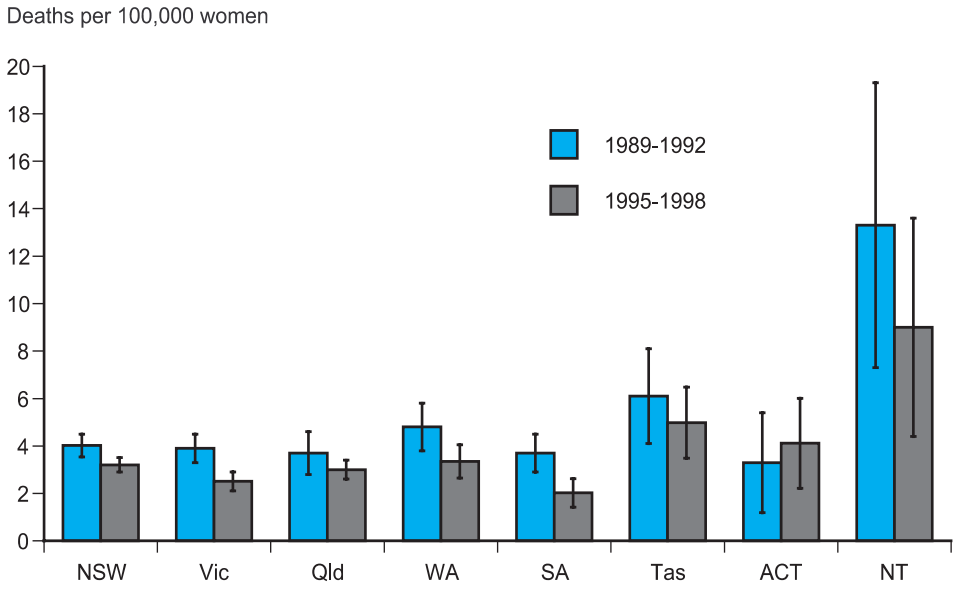


Refer to Table A21.

Note: Mortality data for 1989 is based on year of death and 1998 based on year of registration.

Figure 16: Age-specific cervical cancer death rates by age group, Australia, 1989 and 1998

- As with most cancers, cervical cancer mortality increases with age. Very few deaths occur in women aged less than 20 years of age (on average < 1 per year). Death rates tend to increase gradually from age 25–29 years through to those women in the 80-plus age group where the rate increases sharply (Table A21).
- In 1998, in the target age group, the age-specific death rate increased gradually from a rate of 0.4 per 100,000 women in those aged 20–24 years to 6.0 deaths per 100,000 women in the 65–69 age group (Table A21).
- Between 1989 and 1998, age-specific death rates have declined in all age groups.



Refer to Tables A23 and A25.

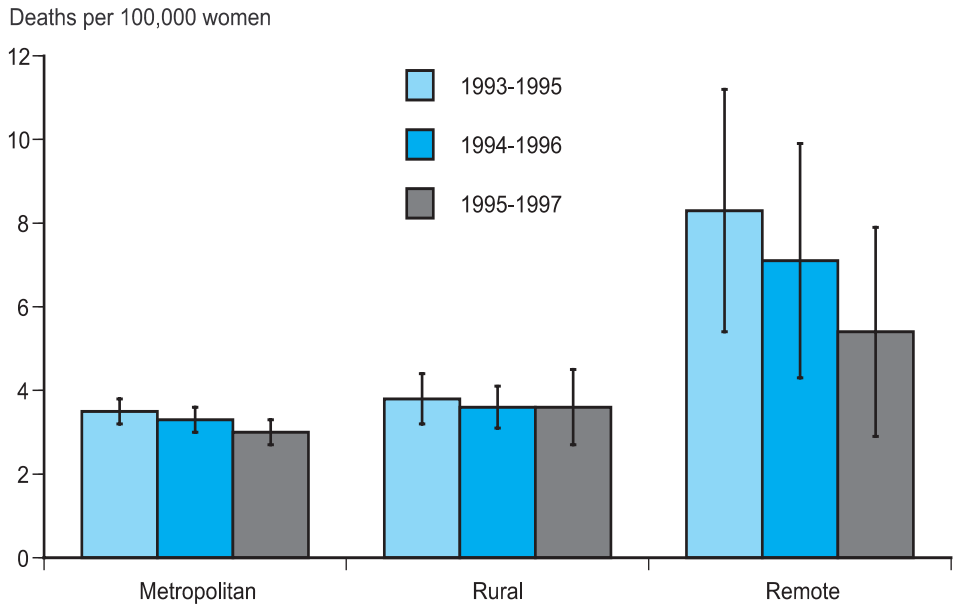
Notes: (1) The age-standardised rates were averaged over 4 years to smooth annual variations that may occur in the smaller States and Territories. (2) Deaths derived from place of usual residence and not place of death. (3) Mortality data from 1989–1996 based on year of death and 1997–1998 based on year of registration. (4) Rates are expressed per 100,000 women and age-standardised to the Australian 1991 population. (5) Bars on graphs represent 95%confidence intervals.

Figure 17: Age-standardised cervical cancer death rates by women aged 20–69 years, by State and Territory, 1989–1992 and 1995–1998

- There were 1,206 deaths from cervical cancer in the States and Territories during the period from 1995–1998. As expected the largest number of deaths from cervical cancer were in the most populous States of New South Wales (441) and Victoria (272) (Table A24).
- There was considerable variation in the age-standardised rates of cervical cancer mortality for all women between States and Territories. The Northern Territory rate (6.2 per 100,000 women) was nearly double that of the next highest State, Tasmania (3.5 per 100,000 women) (Table A25). The age-standardised cervical cancer mortality rate for the Northern Territory reflects its high proportion of Aboriginal women. In the period 1987–1993 Aboriginal 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 between States and Territories for women in the target age group, 20–69 years. The Northern Territory rate (9.0 per 100,000 women) was again almost double that of the next highest State, Tasmania (5.0 per 100,000 women), and South Australia (2.0 per 100,000 women) and Victoria (2.5 per 100,000 women) had the lowest rates of death from cervical cancer (Table A25).

Indicator 9: Mortality by location

Death 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).



Refer to Table A27.

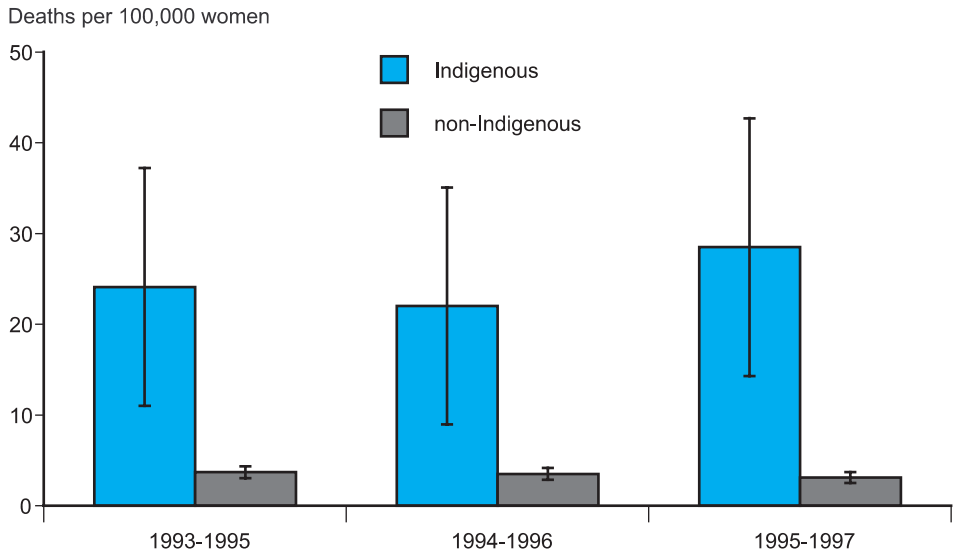
Notes: (1) The age-standardised rates are presented as 3-year rolling blocks of data. (2) Deaths derived from place of usual residence and not place of death. (3) Mortality data from 1993–1996 based on year of death and 1997 based on year of registration. (4) Rates are expressed per 100,000 women and age-standardised to the Australian 1991 population. (5) Bars on graphs represent 95%confidence intervals.

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

- In the 3-year period 1995–1997 there were 643 deaths (69% of all deaths) attributed to cervical cancer in metropolitan locations, 268 deaths (28% of all deaths) in rural locations and 26 deaths (3% of all deaths) in remote locations (Table A26).
- The age-standardised cervical cancer death rate for women in the target age group 20–69 years was highest in remote locations (5.4 per 100,000 women) in the period 1995–1997. During the same period the rate for cervical cancer deaths in metropolitan and rural locations were 3.0 and 3.6 per 100,000 women (Table A27).
- The age-standardised cervical cancer death rate declined for all locations during the three periods, 1993–1995, 1994–1996 and 1995–1997, for women in the target age group 20–69 years. The overall decline in the target age group was 14 per cent in metropolitan locations, 5 per cent in rural locations, and 35 per cent in remote locations (Table A27).
- The higher death rate in remote location probably reflects to a large extent the relatively high proportion of Indigenous people in remote areas, and the higher death rates among Indigenous women (see Indicator 10).

Indicator 10: Indigenous mortality

Death rate 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).



Refer to Table A29.

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) Mortality data from 1993–1996 based on year of death and 1997 based on year of registration. (4) Rates are expressed per 100,000 women and age-standardised to the Australian 1991 population. (5) Only South Australia, Western Australia and the Northern Territory have Indigenous death registration data considered to be of a publishable standard. (6) Bars on graphs represent 95%confidence intervals.

Figure 19: Age-standardised cervical cancer mortality rates by women aged 20–69 years, by Indigenous status, 1993–1997

- Due to the difficulties of Indigenous identification in health data collections mortality data only from Western Australia, South Australia and the Northern Territory is 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 period from 1995 to 1997 there were 19 deaths attributable to cervical cancer among Indigenous women, an age-standardised rate of 27.6 per 100,000 women. This is over nine times more deaths than in the non-Indigenous women (3.0 per 100,000 women). The age-standardised rate for Indigenous women in the target age group 20–69 years was 28.5 per 100,000 women for the period 1995–1997. The comparative figure for the non-Indigenous women was 3.1 per 100,000 women (Tables A28 and A29).
- Over the three periods from 1993 to 1997 the Indigenous cervical cancer mortality rate among women in the target age group 20–69 years increased from 24 to 28 deaths per 100,000 women. However, this increase is not statistically significant and is mainly due to fluctuations in the small number of deaths rather than a real increase in the rate of cervical cancer deaths among Indigenous women (Table A29).

Tables

Indicator 1: Participation rate for cervical cancer screening

Table A1a: Number of women participating in the National Cervical Screening Program by age, State or Territory, 1996–1997

Age group	NSW [a][b]	Vic	WA	SA[b]	Tas	ACT[c]	NT[d]	Australia
20–24	100,579	84,743	38,551	28,157	10,458	7,354	4,958	274,800
25–29	142,392	123,651	48,584	36,478	11,786	8,716	6,184	377,791
30–34	148,690	127,168	50,173	37,889	12,293	8,571	5,511	390,296
35–39	144,884	125,992	48,770	37,991	12,242	8,217	4,722	382,818
40–44	121,267	107,973	42,240	32,341	10,358	7,409	3,802	325,390
45–49	102,807	93,757	34,555	28,267	8,757	6,841	3,094	278,078
50–54	77,168	72,536	23,546	20,925	6,201	4,621	1,827	206,824
55–59	52,031	50,217	16,292	14,740	4,441	2,744	1,028	141,493
60–64	37,832	37,706	11,973	11,506	3,336	1,830	518	104,701
65–69	28,365	30,597	8,693	9,298	2,498	1,182	284	80,917
70–74	19,105	14,576	3,416	7,022	929	477	116	45,640
75–79	n.a.	5,292	1,153	n.a.	332	155	49	6,981
80–84	n.a.	1,869	414	n.a.	122	51	22	2,478
85+	n.a.	997	15	n.a.	39	9	6	1,066
Not stated	9,750	n.a.	n.a.	1,029	10	77	96	10,962
Total	984,870	877,074	328,375	265,643	83,802	58,254	32,217	2,630,235
20–69 years	956,015	854,340	323,377	257,592	82,370	57,485	31,929	2,563,108

(a) The New South Wales Pap Test register commenced in July 1996, therefore data has been estimated for the period January to July 1996.

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

(c) The ACT register only registers women with an ACT address.

(d) The Northern Territory Pap Smear register commenced in March 1996, therefore data has been estimated for the period January to March 1996.

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

Table A1b: Number of women participating in the National Cervical Screening Program by age, State or Territory, 1997–1998

Age group	NSW	Vic	WA	SA[(a)]	Tas	ACT[(b)]	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	109283	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
Total	1,051,362	887,338	329,919	275,247	85,521	59,936	32,327	2,721,650
20–69 years	1,021,631	864,549	324,628	267,311	84,193	59,100	32,092	2,653,504

(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.
(b) The ACT register only registers women with an ACT address

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

Table A2a: Participation rates in the National Cervical Screening Program by age, State or Territory, 1996–1997

Age group	NSW[(a)]	Vic	WA	SA[(a)]	Tas	ACT[(b)]	NT	Australia
20–24	44.6	49.8	58.1	55.5	66.3	52.1	60.1	49.9
25–29	59.8	67.8	70.9	68.7	71.7	66.0	67.1	65.0
30–34	62.4	71.5	73.0	69.5	71.4	68.3	67.1	67.6
35–39	63.4	75.0	73.4	70.8	69.7	68.6	67.0	69.2
40–44	62.0	74.1	71.8	68.8	68.6	69.2	66.6	68.0
45–49	60.9	74.2	70.0	67.8	67.5	70.3	69.8	67.3
50–54	64.1	82.0	71.8	71.1	67.6	75.7	67.2	71.5
55–59	53.2	69.8	62.1	62.0	58.0	66.1	62.5	60.7
60–64	44.2	59.7	55.0	54.5	50.3	60.1	48.4	51.7
65–69	32.8	48.8	42.1	42.5	38.3	43.9	37.4	40.1
70–74	24.4	25.5	19.4	33.9	15.6	19.9	22.7	25.0
75–79	n.a.	12.3	8.7	n.a.	7.1	9.2	14.9	5.0
80–84	n.a.	6.6	4.6	n.a.	3.9	5.0	12.3	2.7
85+[(c)]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total	50.9	61.1	61.7	56.9	57.8	62.5	67.3	56.3
20–69 years	56.7	68.0	67.4	64.9	65.9	65.1	65.1	62.4

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

(b) The ACT register only registers women with an ACT address.

(c) Rates cannot be calculated for women in the 85+ age group because hysterectomy fractions are not available for this age group.

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

Table A2b: Participation rates in the National Cervical Screening Program by age, State or Territory, 1997–1998

Age group	NSW	Vic	WA	SA[a]	Tas	ACT[b]	NT	Australia
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
70–74	17.0	26.2	20.2	12.8	14.7	22.1	22.0	22.4
75–79	8.2	11.9	9.1	n.a.	6.6	10.6	15.5	8.5
80–84	4.0	6.0	4.3	n.a.	3.3	4.9	7.8	4.2
85+[c]	n.a	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a
Total	53.7	61.0	60.7	60.8	58.8	64.2	66.0	57.7
20–69 years	60.1	68.1	66.4	67.2	67.5	67.4	64.1	63.9

(a) South Australia have grouped all women aged 70 years or more, and for the purposes of this table they appear in the 70–74 age group.
(b) The ACT register only registers women with an ACT address.
(c) Rates cannot be calculated for women in the 85+ age group because hysterectomy fractions are not available for this age group.

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

Indicator 2: Early rescreening

Table A3: Number of women with repeat screenings in the 24 months following a negative Pap smear in February 1997 by State and Territory, and Australia 1996-1997 and 1997-1998

No. of tests	NSW	Vic	WA	SA	Tas	ACT[a]	NT	Australia 1997-1998	Australia[b] 1996-1997
					Number of women				
0	29,603	24,855	9,402	7,980	2,520	1,358	842	76,560	44,125
1	20,827	18,803	6,546	4,556	1,628	686	410	53,456	31,407
2	4,050	4,225	1,197	961	311	86	92	10,922	7,295
3	657	887	202	241	57	8	28	2,080	1,567
4	136	266	33	53	11	2	7	508	470
5 or more	30	136	6	19	2	0	3	196	195

(a) The ACT register only registers women with an ACT address.
(b) The NSW Pap Test Register began operations on 29 August 1996, therefore no data were available for this indicaor for the period 1996-1997.

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

Table A4: Percentage of women with repeat screenings in the 24 months following a negative Pap smear in February 1997 by State and Territory, and Australia 1996-1997 and 1997-1998

No. of tests	NSW	Vic	WA	SA	Tas	ACT[a]	NT	Australia 1997-1998	Australia[b] 1996-1997
					Per cent of women				
0	53.5	50.5	54.1	57.8	55.6	63.5	60.9	53.3	51.9
1	37.7	38.2	37.7	33.0	36.0	32.1	29.7	37.2	36.9
2	7.3	8.6	6.9	7.0	6.9	4.0	6.7	7.6	8.6
3	1.2	1.8	1.2	1.7	1.3	0.4	2.0	1.4	1.9
4	0.2	0.5	0.2	0.4	0.2	0.1	0.5	0.4	0.6
5 or more	0.1	0.3	0.0	0.1	0.0	0.0	0.2	0.1	0.2

(a) The ACT register only registers women with an ACT address.
(b) The NSW Pap Test Register began operations on 29 August 1996, therefore no data were available for this indicaor for the period 1996-1997.

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

Indicator 3: Low-grade abnormality detection

Table A5a: Number of low- and high-grade abnormalities on histology for women aged 20–69 years, by State and Territory, 1997

Abnormalities	NSW	Vic	WA	SA	Tas	NT	Australia
Low-grade	6,447	3,419	2,209	2,370	543	326	15,314
High-grade	3,601	3,388	1,432	1,310	430	231	10,392
Ratio	1.79	1.01	1.54	1.81	1.26	1.41	1.47

Notes: (1) The Queensland Health Pap Smear Register began operations in February 1999; therefore no data are available for this report.
(2) The ACT did not collect histology details during this period; therefore no data are available for this indicator.

Table A5b: Number of low- and high-grade abnormalities on histology for women aged 20–69 years, by State and Territory, 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

Notes: (1) The Queensland Health Pap Smear Register began operations in February 1999; therefore no data are available for this report.
(2) The ACT did not collect histology details during this period; therefore no data are available for this indicator.

Indicator 4: High-grade abnormality detection

Table A6a: Number of histologically confirmed high-grade abnormalities by age, by State and Territory, 1997

Age group	NSW	Vic	WA	SA[(a)]	Tas	NT	Australia
20–24	788	670	320	184	115	46	2,123
25–29	1,022	1,015	370	335	109	62	2,913
30–34	753	696	286	265	74	41	2,115
35–39	453	429	193	216	61	32	1,384
40–44	267	277	110	90	32	19	795
45–49	154	139	82	89	17	15	496
50–54	64	80	28	50	9	9	240
55–59	34	35	16	27	5	5	122
60–64	31	23	15	33	2	2	106
65–69	35	24	12	21	6	0	98
70–74	20	16	1	35	n.a.	n.a.	72
75–79	7	8	2	n.a.	n.a.	n.a.	17
80–84	2	3	4	n.a.	n.a.	n.a.	9
85+	3	n.a.	n.a.	n.a.	n.a.	n.a.	3
Age not stated	5	n.a.	n.a.	1	n.a.	n.a.	6
Total	3,638	3,415	1,439	1,346	430	231	10,499
20–69 years	3,601	3,388	1,432	1,310	430	231	10,392

(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.

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

Table A6b: Number of histologically confirmed high-grade abnormalities by age, by State and Territory, 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
Total	3,996	3,014	1,428	1,535	535	298	10,806
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.

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

Table A7a: Number of women screened by age, by State and Territory, 1997

Age group	NSW	Vic	WA	SA[(a)]	Tas	NT	Australia
20–24	58,842	45,403	21,222	15,231	5,705	2,800	149,203
25–29	85,421	70,504	27,798	20,617	7,121	3,497	214,958
30–34	89,016	72,728	28,423	21,266	7,173	3,055	221,661
35–39	87,766	72,287	28,506	21,413	7,377	2,612	219,961
40–44	73,682	62,536	24,720	18,245	6,277	2,073	187,533
45–49	62,596	54,917	20,078	16,097	5,352	1,748	160,788
50–54	48,045	43,848	14,270	12,215	3,997	1,052	123,427
55–59	32,031	29,632	9,554	8,494	2,706	579	82,996
60–64	23,277	21,639	6,902	6,681	2,057	285	60,841
65–69	17,239	16,715	4,897	5,211	1,551	168	45,781
70–74	11,439	7,989	n.a.	3,887	488	59	23,862
75–79	n.a.	2,957	n.a.	n.a.	161	29	3,147
80–84	n.a.	996	n.a.	n.a.	64	9	1,069
85+	n.a.	n.a.	n.a.	n.a.	19	3	22
Age not stated	0	0	0	333	4	22	359
Total	589,354	502,151	186,370	149,690	50,052	17,991	1,495,608
20–69 years	577,915	490,209	186,370	145,470	49,316	17,869	1,467,149

(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.

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

Table A7b: Number of women screened by age, by State and Territory, 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	1,54,804
25–29	90,720	73,379	29,342	21,785	6,883	3,584	2,25,693
30–34	92,053	76,937	29,693	22,260	6,911	3,170	2,31,024
35–39	93,293	77,383	30,288	23,111	7,387	2,896	2,34,358
40–44	79,402	67,374	26,259	20,351	6,177	2,249	2,01,812
45–49	66,812	58,146	21,676	17,464	5,207	1,783	1,71,088
50–54	52,675	46,514	15,753	13,857	4,073	1,092	1,33,964
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
Total	629,620	535,736	198,463	160,994	49,125	18,669	1,592,607
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.

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

Table A8a: Rate of histologically confirmed high-grade abnormalities per 1,000 women screened, by State and Territory, 1997

Age group	NSW	Vic	WA	SA[(a)]	Tas	NT	Australia
20–24	13.4	14.8	15.1	12.1	20.2	16.4	14.2
25–29	12.0	14.4	13.3	16.3	15.3	17.7	13.6
30–34	8.5	9.6	10.1	12.5	10.3	13.4	9.5
35–39	5.2	5.9	6.8	10.1	8.3	12.3	6.3
40–44	3.6	4.4	4.5	4.9	5.1	9.2	4.2
45–49	2.5	2.5	4.1	5.5	3.2	8.6	3.1
50–54	1.3	1.8	1.9	4.1	2.3	8.6	1.9
55–59	1.1	1.2	1.7	3.2	1.8	8.6	1.5
60–64	1.3	1.1	2.2	4.9	1.0	7.0	1.7
65–69	2.0	1.4	2.5	4.0	3.9	0.0	2.1
70–74	1.8	2.0	n.a.	9.0	n.a.	0.0	3.0
75–79	n.a.	2.7	n.a.	n.a.	n.a.	0.0	5.4
80–84	n.a.	3.0	n.a.	n.a.	n.a.	0.0	8.4
85+	n.a.	n.a.	n.a.	n.a.	n.a	0.0	136.4
Total	6.2	6.8	7.7	9.0	8.6	12.8	7.0
20–69 years	6.2	6.9	7.7	9.0	8.7	12.9	7.1

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

(2) The ACT did not collect histology details during this period; therefore no data are available for this indicator.

Table A8b: Rate of histologically confirmed high-grade abnormalities per 1,000 women screened, by State and Territory, 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
Total	6.4	5.6	7.2	9.5	10.9	16.0	6.8
20–69 years	6.4	5.7	7.1	9.6	11.0	16.1	6.9

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

(2) The ACT did not collect histology details during this period; therefore no data are available for this indicator.

Table A9a: Age-standardised high-grade abnormality rate on histology per 1,000 women screened aged 20-69 years, by State and Territory, 1997

	NSW	Vic	WA	SA	Tas	NT	Australia
Standardised rate	6.1	6.9	7.3	8.8	8.5	11.3	6.9
95% CI	5.9–6.3	6.7–7.1	6.9–7.7	8.3–9.2	7.6–9.2	9.8–12.7	6.8–7.0

Notes: (1) The Queensland Health Pap Smear Register began operations in February 1999; therefore no data are available for this report.

(2) The ACT did not collect histology details during this period; therefore no data are available for this indicator.

(3) Standardised to the 1991 Australian total population.

Table A9b: Age-standardised high-grade abnormality rate on histology per 1,000 women screened aged 20-69 years, by State and Territory, 1998

	NSW	Vic	WA	SA	Tas	NT	Australia
Standardised rate	6.3	5.8	6.7	9.5	10.5	13.3	6.7
95% CI	6.1–6.5	5.6–6.0	6.4–7.1	9.1–10.0	9.6–11.4	11.8–14.8	6.6–6.9

Notes: (1) The Queensland Health Pap Smear Register began operations in February 1999; therefore no data are available for this report.

(2) The ACT did not collect histology details during this period; therefore no data are available for this indicator.

(3) Standardised to the 1991 Australian total population.

Indicator 5: Incidence of micro-invasive cervical cancer

Table A10: New cases of micro-invasive cervical cancer by age, Australia, 1985–1996

Age group	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
0–4	0	0	0	0	0	0	0	0	0	0	0	0
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	1	0	0	0	0	0	1	0	0	0	0	0
20–24	8	1	3	4	1	4	0	5	1	7	1	6
25–29	11	9	8	13	12	15	14	13	7	17	16	17
30–34	23	17	18	20	27	30	31	32	31	32	42	18
35–39	19	17	25	12	10	24	38	23	26	31	29	36
40–44	13	6	14	11	17	22	32	24	16	26	29	23
45–49	11	7	10	9	5	17	10	12	15	27	22	11
50–54	5	4	3	6	4	4	11	12	17	9	12	10
55–59	2	3	4	5	5	8	6	12	5	5	8	7
60–64	8	1	3	2	6	8	7	7	6	10	9	6
65–69	3	2	1	2	2	6	7	9	10	6	7	10
70–74	2	3	0	0	0	2	4	2	4	6	5	3
75–79	0	1	1	1	1	3	3	2	1	3	5	2
80–84	0	0	0	0	0	0	2	0	0	0	1	1
85+	0	0	0	0	0	0	0	0	1	2	1	1
Total	106	71	90	85	90	143	166	153	140	181	187	151

Source: National Cancer Statistics Clearing House (AIHW).

Table A11: Age-specific and age-standardised rates of micro-invasive cervical cancer by age, Australia, 1985–1996

Age group	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
0–4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
20–24	1.2	0.2	0.5	0.6	0.2	0.6	0.0	0.7	0.1	1.0	0.1	0.9
25–29	1.7	1.3	1.2	1.9	1.7	2.1	2.0	1.9	1.0	2.5	2.3	2.4
30–34	3.7	2.7	2.8	3.0	4.0	4.3	4.4	4.4	4.2	4.4	5.7	2.5
35–39	3.2	2.7	4.0	1.9	1.5	3.7	5.7	3.4	3.8	4.4	4.1	4.9
40–44	2.8	1.2	2.6	1.9	2.9	3.6	5.0	3.7	2.5	4.0	4.3	3.4
45–49	2.8	1.7	2.4	2.1	1.1	3.6	2.0	2.2	2.6	4.5	3.6	1.7
50–54	1.4	1.1	0.8	1.6	1.0	1.0	2.7	2.8	3.9	2.0	2.5	2.0
55–59	0.5	0.8	1.1	1.4	1.4	2.2	1.7	3.3	1.3	1.3	2.0	1.7
60–64	2.2	0.3	0.8	0.5	1.6	2.2	1.9	1.9	1.7	2.8	2.5	1.7
65–69	1.0	0.7	0.3	0.6	0.6	1.7	2.0	2.5	2.8	1.7	2.0	2.8
70–74	0.8	1.1	0.0	0.0	0.0	0.7	1.4	0.7	1.3	1.9	1.5	0.9
75–79	0.0	0.5	0.5	0.5	0.5	1.4	1.3	0.9	0.4	1.3	2.1	0.8
80–84	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.6	0.6
85+	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.6	0.7	0.7
All ages												
AS Rate (A)	1.4	0.9	1.2	1.1	1.1	1.7	1.9	1.7	1.6	2.0	2.0	1.6
AS Rate (W)	1.2	0.8	1.0	0.9	0.9	1.4	1.6	1.5	1.3	1.7	1.7	1.4
Ages 20–69												
AS Rate (A)	2.2	1.4	1.8	1.7	1.7	2.6	2.9	2.7	2.4	3.0	3.1	2.5
AS Rate (W)	2.1	1.3	1.7	1.6	1.6	2.5	2.7	2.6	2.3	2.9	2.9	2.4

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).

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

Table A12: New cases of cervical cancer by age, Australia, 1985–1996

Age group	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
0–4	0	0	0	1	0	0	0	0	0	0	0	0
5–9	0	0	0	0	0	0	0	0	0	1	0	0
10–14	1	0	0	0	0	0	0	0	0	0	0	0
15–19	1	3	3	4	1	1	1	0	1	1	2	1
20–24	23	12	16	18	17	13	11	9	10	16	5	14
25–29	70	61	66	76	66	61	48	51	36	47	49	43
30–34	109	120	137	130	128	110	119	110	104	117	113	70
35–39	131	125	149	136	121	154	140	128	127	131	117	137
40–44	108	114	113	125	128	136	153	130	130	130	115	118
45–49	83	114	95	92	90	122	102	100	100	133	100	102
50–54	87	75	65	63	81	66	91	77	90	87	58	78
55–59	83	78	60	65	85	82	57	78	80	73	66	62
60–64	97	83	106	91	83	77	84	77	74	89	69	63
65–69	82	81	88	104	97	74	90	88	93	93	77	64
70–74	69	64	78	56	66	67	79	70	65	79	73	57
75–79	43	42	56	50	49	49	48	52	49	64	51	48
80–84	26	27	31	34	26	29	40	34	36	39	30	41
85+	20	20	25	22	20	24	35	21	22	25	34	25
Total	1,033	1,019	1,088	1,067	1,058	1,065	1,098	1,025	1,017	1,125	959	923

Note: The above table includes the incidence of micro-invasive and invasive cervical cancers.
Source: National Cancer Statistics Clearing House (AIHW).

Table A13: Age-specific and age-standardised incidence rates of cervical cancer by age, Australia, 1985–1996

Age group	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
0–4	0.0	0.0	0.0	0.2	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	0.2	0.0	0.0
10–14	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15–19	0.2	0.5	0.4	0.6	0.1	0.1	0.2	0.0	0.2	0.2	0.3	0.2
20–24	3.5	1.8	2.5	2.8	2.6	1.9	1.6	1.3	1.4	2.3	0.7	2.0
25–29	10.7	9.1	9.7	10.9	9.3	8.6	6.9	7.4	5.3	6.9	7.1	6.1
30–34	17.4	18.9	21.2	19.7	18.9	15.8	16.7	15.2	14.2	15.9	15.5	9.7
35–39	21.7	20.0	23.9	21.4	18.7	23.5	21.1	18.9	18.5	18.8	16.4	18.8
40–44	22.9	23.1	21.1	21.9	21.5	22.0	23.9	20.3	20.1	19.8	17.2	17.4
45–49	20.8	27.9	22.5	21.1	19.7	25.5	20.3	18.6	17.5	22.3	16.2	15.9
50–54	24.3	20.8	17.7	16.7	20.8	16.5	22.0	18.2	20.7	19.2	12.2	15.7
55–59	22.2	21.0	16.3	17.9	23.5	22.8	15.9	21.3	21.3	18.9	16.7	15.2
60–64	26.7	22.6	28.8	24.6	22.4	20.8	22.7	21.1	20.6	24.9	19.3	17.7
65–69	28.0	26.6	27.8	31.6	28.3	21.2	25.6	24.9	26.2	26.2	21.7	18.0
70–74	26.6	24.3	29.2	20.9	24.8	24.8	28.0	23.9	21.4	24.9	22.6	17.4
75–79	23.4	21.9	28.2	24.3	22.8	22.2	21.3	22.7	21.3	28.1	21.9	19.7
80–84	22.5	22.7	25.0	26.3	19.4	20.8	27.5	22.5	22.7	23.3	17.4	23.2
85+	22.5	21.1	25.7	22.0	19.4	22.7	31.8	18.2	18.1	19.6	25.3	17.7
All ages												
AS Rate (A)	13.4	13.0	13.4	12.9	12.5	12.3	12.4	11.4	11.1	12.0	10.0	9.4
AS Rate (W)	11.1	10.8	11.0	10.6	10.3	10.2	10.1	9.3	9.1	9.9	8.2	7.8
Ages 20–69												
AS Rate (A)	18.4	18.0	18.1	17.7	17.2	16.9	16.6	15.4	15.1	16.1	13.4	12.8
AS Rate (W)	18.1	17.6	17.5	17.2	16.8	16.5	16.1	15.0	14.7	15.8	12.9	12.5

Note: Rates are expressed per 100,000 women and age standardised to the Australian 1991 population (A) and the World Standard Population (W).
Source: National Cancer Statistics Clearing House (AIHW).

Table A14: Number of new cases of cervical cancer by age, by State and Territory, 1993–1996

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
0–4	0	0	0	0	0	0	0	0	0
5–9	0	0	0	0	1	0	0	0	1
10–14	0	0	0	0	0	0	0	0	0
15–19	3	0	2	0	0	0	0	0	5
20–24	11	15	13	5	0	1	0	0	45
25–29	47	40	38	22	15	6	5	2	175
30–34	135	105	72	44	27	15	4	2	404
35–39	183	124	110	44	27	10	6	8	512
40–44	146	135	99	54	33	9	10	7	493
45–49	151	104	91	36	26	14	6	7	435
50–54	113	75	65	25	18	5	6	6	313
55–59	100	63	53	27	13	13	7	5	281
60–64	102	83	45	33	16	11	3	2	295
65–69	111	86	59	34	19	11	3	4	327
70–74	108	56	51	21	23	10	3	2	274
75–79	76	63	42	12	12	7	0	0	212
80–84	47	44	24	11	11	5	3	1	146
85+	36	30	17	12	9	2	0	0	106
Total	1,369	1,023	781	380	250	119	56	46	4,024

Source: National Cancer Statistics Clearing House (AIHW).

Table A15: Age-specific and age-standardised incidence rates for cervical cancer, by State and Territory, 1993–1996

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
0–4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5–9	0.0	0.0	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	1.2	2.1	2.5	1.9	0.0	1.5	0.0	0.0	1.6
25–29	5.1	5.6	7.8	8.3	7.0	9.0	9.8	5.7	6.4
30–34	13.6	14.2	13.9	15.6	11.6	20.0	7.7	6.0	13.8
35–39	19.2	17.5	22.0	15.8	11.8	13.4	11.7	27.1	18.1
40–44	16.5	20.3	21.0	20.5	15.2	13.0	19.8	27.5	18.6
45–49	18.5	17.1	20.8	15.6	12.9	22.2	13.0	34.0	17.9
50–54	17.7	16.0	19.5	14.5	11.6	10.2	19.4	44.2	16.8
55–59	18.4	15.7	19.7	18.9	9.7	30.6	31.7	59.0	18.0
60–64	20.2	22.3	18.8	26.4	12.7	28.1	17.6	34.4	20.6
65–69	21.9	23.3	25.1	28.9	14.5	28.7	19.2	97.9	23.0
70–74	23.6	16.9	24.5	20.7	19.0	28.2	22.1	72.2	21.6
75–79	22.5	26.2	27.0	16.2	13.4	26.0	0.0	0.0	22.7
80–84	19.5	24.8	22.0	19.6	16.9	26.1	50.9	110.9	21.6
85+	19.5	21.1	20.2	27.1	17.6	14.3	0.0	0.0	20.2
All ages									
AS Rate (A)	10.5	10.6	11.9	11.0	7.7	11.8	9.7	20.6	10.6
95% CI	10.0–11.0	10.0–11.0	11.0–13.0	10.0–12.0	7.0–9.0	10.0–14.0	7.0–12.0	15.0–27.0	10.0–11.0
AS Rate (W)	8.6	8.6	9.8	9.1	6.3	9.7	8.1	17.0	8.7
95% CI	8.1–9.0	8.1–9.1	9.1–10.4	8.2–10.0	5.5–7.1	8.0–11.4	6.0–10.3	12.1–21.9	8.4–9.0
Ages 20–69									
AS Rate (A)	14.0	14.3	16.0	15.2	10.2	15.8	13.3	27.1	14.3
95% CI	13.2–14.8	13.3–15.3	14.8–17.2	13.5–16.8	8.8–11.6	12.6–19.0	9.6–17.0	19.0–35.2	13.8–14.8
AS Rate (W)	13.7	13.9	15.6	14.8	9.9	15.5	13.3	26.8	14.0
95% CI	13.6–13.8	13.8–14.0	15.5–15.8	14.6–14.9	9.8–10.0	15.4–15.6	13.2–13.4	26.6–27.0	13.9–14.1

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

Source: National Cancer Statistics Clearing House (AIHW).

Table A16: Number of new cases of cervical cancer by histological type for women aged 20–69 years, Australia, 1985–1996

Histological type	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Squamous	665	637	660	640	671	620	635	604	588	621	532	515
Adenocarcinoma	91	114	124	151	103	146	137	133	134	189	133	140
Adenosquamous	36	42	41	40	48	50	45	51	46	39	35	39
Other	81	70	71	69	74	79	78	60	76	68	69	57
Micro-invasive	103	67	89	84	89	138	156	149	134	170	175	144
Total	976	930	985	984	985	1,033	1051	997	978	1,087	944	895

Source: National Cancer Statistics Clearing House (AIHW).

Table A17: Age-standardised incidence rates for cervical cancer by histological type for women aged 20–69 years, Australia, 1985–1996

Histological type	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Squamous	14.0	13.2	13.3	12.6	12.9	11.7	11.7	11.0	10.5	10.9	9.2	8.8
Adenocarcinoma	1.9	2.4	2.5	3.0	2.0	2.8	2.5	2.4	2.4	3.3	2.3	2.4
Adenosquamous	0.8	0.9	0.8	0.8	0.9	0.9	0.8	0.9	0.8	0.7	0.6	0.7
Other	1.7	1.4	1.4	1.3	1.4	1.5	1.4	1.1	1.4	1.2	1.2	1.0
Micro-invasive	2.2	1.4	1.8	1.7	1.7	2.6	2.9	2.7	2.4	3.0	3.1	2.5

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

Source: National Cancer Statistics Clearing House (AIHW).

Indicator 8: Incidence by location

Table A18: Number of new cases of cervical cancer by age and location, 1993–95 to 1995–96

	Metropolitan			Rural			Remote		
Age group	1993–95	1994–96	1995–96	1993–95	1994–96	1995–96	1993–95	1994–96	1995–96
0–4	0	0	0	0	0	0	0	0	0
5–9	1	1	0	0	0	0	0	0	0
10–14	0	0	0	0	0	0	0	0	0
15–19	3	2	2	1	2	1	0	0	0
20–24	17	19	12	4	8	6	2	1	0
25–29	86	89	63	26	32	25	6	4	2
30–34	204	180	118	81	75	52	13	9	8
35–39	241	245	185	80	85	54	10	11	11
40–44	240	235	170	85	81	55	11	7	3
45–49	213	220	155	67	63	36	17	14	5
50–54	145	137	99	55	50	30	7	10	6
55–59	135	118	90	55	51	29	7	9	6
60–64	146	129	89	50	53	38	5	7	3
65–69	160	141	91	64	54	39	12	11	8
70–74	155	149	98	41	40	30	5	5	2
75–79	95	97	68	44	42	29	4	3	1
80–84	65	69	49	27	29	19	3	1	1
85+	52	55	45	16	16	10	2	2	2
Total	1,957	1,886	1,334	696	681	453	104	94	58

Notes: The numbers are presented as 3-year rolling blocks of data for the periods 1993–1995 and 1994–1996, and 2-yearly for the period 1995–1996.

Years refer to calendar years.

Source: National Cancer Statistics Clearing House (AIHW).

Table A19: Age-specific and age-standardised incidence rates for cervical cancer by age and location, 1993–95 to 1995–96

	Metropolitan			Rural			Remote		
Age group	1993–95	1994–96	1995–96	1993–95	1994–96	1995–96	1993–95	1994–96	1995–96
0–4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5–9	0.1	0.1	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	0.1	0.2	0.2	0.4	0.3	0.0	0.0	0.0
20–24	1.0	1.2	1.1	0.9	1.9	2.1	3.0	1.6	0.0
25–29	5.6	5.7	6.0	5.8	7.1	8.3	8.4	5.6	4.2
30–34	12.9	11.4	11.2	15.0	14.1	14.8	17.6	12.4	16.7
35–39	16.1	16.1	18.0	14.9	15.5	14.6	15.7	17.0	25.3
40–44	16.9	16.3	17.6	17.2	16.0	16.1	20.7	13.0	8.3
45–49	16.4	16.3	16.9	15.1	13.7	11.6	37.8	30.4	16.1
50–54	14.9	13.4	14.2	15.5	13.5	11.9	20.6	28.5	25.2
55–59	16.7	14.2	16.0	17.1	15.4	13.0	26.8	33.5	33.1
60–64	19.6	17.4	18.0	16.3	17.3	18.6	24.3	33.8	21.7
65–69	21.4	18.9	18.3	21.4	18.0	19.4	71.5	64.6	70.0
70–74	23.1	21.6	21.2	15.8	15.1	16.8	39.1	38.4	22.9
75–79	19.2	19.3	19.9	23.4	21.8	22.3	45.4	33.6	16.6
80–84	18.2	18.6	19.6	20.1	20.8	20.2	48.9	15.7	23.3
85+	18.7	18.9	22.7	15.9	15.0	13.6	37.7	34.4	49.2
All ages									
AS Rate (A)	9.7	9.2	9.6	9.5	9.2	9.2	16.5	14.8	13.3
	9.3–10.2	8.7–9.6	9.1–10.1	8.8–10.2	8.5–9.9	8.3–10.0	13.2–19.8	11.7–18.0	9.8–16.9
AS Rate (W)	8.0	7.5	7.9	7.8	7.5	7.5	13.3	12.4	10.9
	7.6–8.3	7.1–7.8	7.4–8.3	7.2–8.4	6.9–8.1	6.7–8.2	10.7–15.9	9.8–14.9	8.0–13.8
Ages 20–69									
AS Rate (A)	13.0	12.2	12.8	12.9	12.5	12.4	21.2	19.8	18.3
	12.4–13.7	11.6–12.8	12.1–13.6	11.9–14.0	11.4–13.5	11.1–13.6	16.7–25.8	15.4–24.2	13.2–23.5
AS Rate (W)	12.7	11.9	12.5	12.5	12.1	12	20.8	19.6	17.6
	12.4–13.6	11.6–12.8	12.1–13.6	11.9–14.0	11.5–13.5	11.1–13.6	16.8–25.7	15.5–24.2	13.4–23.3

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

The age-standardised rates are presented as 3-year rolling blocks of data for the periods 1993–1995 and 1994–1996, and 2-yearly for the period 1995–1996.

Years refer to calendar years.

Source: National Cancer Statistics Clearing House.

Indicator 7: Mortality

Table A20: Number of deaths from cervical cancer by age, Australia, 1986–1998

Age group	1986	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
5–9	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
15–19	0	0	0	2	0	0	0	0	0	1	0	0	0
20–24	2	2	0	1	1	3	0	0	0	1	0	0	3
25–29	6	5	3	4	9	6	5	1	6	3	2	2	6
30–34	11	16	11	21	14	14	14	12	12	6	12	8	5
35–39	17	21	14	19	33	22	20	25	9	18	22	18	20
40–44	25	20	25	25	34	20	30	32	31	17	21	16	19
45–49	21	21	28	32	37	27	27	24	37	33	32	28	16
50–54	24	25	19	27	18	20	13	32	35	29	13	22	23
55–59	39	39	36	23	24	24	22	20	28	37	21	25	16
60–64	42	29	39	37	33	34	31	26	26	29	23	22	29
65–69	53	47	44	54	42	34	26	32	39	38	28	31	21
70–74	34	54	38	47	29	36	48	38	34	43	41	37	28
75–79	23	31	35	31	34	31	31	30	31	30	41	35	26
80–84	22	22	35	22	8	26	33	23	28	28	23	26	26
85+	22	16	18	24	23	34	22	23	25	21	22	30	31
Total	341	348	345	369	339	331	322	318	341	334	301	300	269

Note: Mortality data from 1986–1996 based on year of death and 1997 based on year of registration.

Source: AIHW Mortality Database.

Table A21: Age-specific and age-standardised death rates for cervical cancer by age, Australia, 1986–1998

Age group	1986	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	0.0
5–9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10–14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15–19	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
20–24	0.3	0.3	0.0	0.2	0.1	0.4	0.0	0.0	0.0	0.1	0.0	0.0	0.4
25–29	0.9	0.7	0.4	0.6	1.3	0.9	0.7	0.1	0.9	0.4	0.3	0.3	0.8
30–34	1.7	2.5	1.7	3.1	2.0	2.0	1.9	1.6	1.6	0.8	1.7	1.1	0.7
35–39	2.7	3.4	2.2	2.9	5.0	3.3	3.0	3.6	1.3	2.5	3.0	2.4	2.7
40–44	5.1	3.7	4.4	4.2	5.5	3.1	4.7	4.9	4.7	2.5	3.1	2.3	2.7
45–49	5.1	5.0	6.4	7.0	7.7	5.4	5.0	4.2	6.2	5.4	5.0	4.4	2.5
50–54	6.7	6.8	5.0	6.9	4.5	4.8	3.1	7.4	7.7	6.1	2.6	4.1	4.0
55–59	10.5	10.6	9.9	6.4	6.7	6.7	6.0	5.3	7.3	9.4	5.2	6.0	3.7
60–64	11.4	7.9	10.5	10.0	8.9	9.2	8.5	7.2	7.3	8.1	6.4	6.1	7.8
65–69	17.4	14.9	13.4	15.7	12.0	9.7	7.4	9.0	11.0	10.7	7.9	8.8	6.0
70–74	12.9	20.2	14.2	17.7	10.7	12.8	16.4	12.5	10.7	13.3	12.5	11.3	8.5
75–79	12.0	15.6	17.0	14.4	15.4	13.7	13.5	13.0	13.6	12.9	16.8	13.7	9.7
80–84	18.5	17.8	27.1	16.4	5.7	17.9	21.8	14.5	16.7	16.2	13.0	14.5	14.5
85+	23.3	16.5	18.0	23.3	21.8	30.9	19.0	18.9	19.6	15.6	15.5	20.1	19.6
All ages													
AS Rate (A)	4.2	4.1	4.0	4.2	3.8	3.6	3.4	3.3	3.5	3.3	2.9	2.8	2.5
AS Rate (W)	3.3	3.2	3.1	3.3	3.0	2.7	2.6	2.6	2.7	2.6	2.2	2.1	1.9
Ages 20–69													
AS Rate (A)	4.9	4.5	4.3	4.6	4.6	3.8	3.4	3.6	3.9	3.6	2.9	2.8	2.6
AS Rate (W)	4.8	4.4	4.3	4.6	4.5	3.7	3.4	3.6	3.9	3.7	2.9	2.8	2.6

Notes: (1) Mortality data from 1993–1996 based on year of death and 1997 based on year of registration.

(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 A22: Number of deaths from cervical cancer by age, State and Territory, 1989–1992

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	1	1	0	0	0	2
20–24	0	2	2	0	1	0	0	0	5
25–29	7	3	5	5	4	0	0	0	24
30–34	21	14	8	6	8	3	0	3	63
35–39	33	20	19	9	7	2	0	4	94
40–44	43	25	16	12	10	1	0	2	109
45–49	35	34	17	17	8	5	3	4	123
50–54	27	19	12	8	5	2	2	3	78
55–59	24	29	10	11	4	6	4	5	93
60–64	53	32	20	10	12	7	1	0	135
65–69	59	41	22	15	9	10	0	0	156
70–74	58	39	23	13	18	5	1	3	160
75–79	44	38	18	11	9	6	0	1	127
80–84	35	19	18	6	5	4	1	1	89
85+	34	17	26	11	12	3	0	0	103
Total	473	332	216	135	113	54	12	26	1,361

Note: Mortality data in this table are based on year of death.

Table A23: Age-specific and age-standardised death rates for cervical cancer by age, by State and Territory, 1989–1992

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	0.4	0.5	0.0	0.0	0.0	0.1
20–24	0.0	0.3	0.0	0.0	0.4	0.0	0.0	0.0	0.2
25–29	0.7	0.4	1.5	1.9	1.7	0.0	0.0	0.0	0.9
30–34	2.2	1.9	4.5	2.2	3.4	4.0	0.0	9.4	2.2
35–39	3.7	3.0	7.4	3.4	3.2	2.9	0.0	14.5	3.6
40–44	5.1	3.9	10.0	5.0	4.8	1.5	0.0	8.6	4.4
45–49	5.1	6.8	10.3	9.3	4.8	9.6	8.5	25.0	6.2
50–54	4.8	4.5	10.0	5.4	3.6	4.5	8.0	28.6	4.8
55–59	4.7	7.7	10.2	8.6	3.2	15.1	21.6	70.2	6.4
60–64	10.0	8.3	22.2	8.2	8.8	17.5	6.1	0.0	9.1
65–69	11.7	11.2	26.4	13.5	6.8	25.5	0.0	0.0	11.2
70–74	14.3	13.7	31.9	14.9	16.9	15.6	9.6	121.1	14.4
75–79	13.7	16.2	31.0	15.1	10.5	23.4	0.0	70.2	14.3
80–84	17.2	12.4	39.2	12.7	9.1	24.8	23.0	141.6	15.6
85+	22.2	14.1	49.5	31.2	28.5	26.3	0.0	0.0	23.7
All ages									
AS Rate (A)	3.7	3.5	3.6	4.3	3.4	5.4	2.7	15.4	3.7
95% CI	3.3–4.0	3.1–3.9	3.1–4.0	3.6–5.0	2.8–4.1	3.9–6.8	1.1–4.2	8.1–22.7	3.5–3.9
AS Rate (W)	2.8	2.8	2.7	3.4	2.7	4.2	2.3	11.5	2.9
95% CI	2.6–3.1	2.4–3.1	2.3–3.1	2.8–4.0	2.2–3.2	3.0–5.3	1.0–3.7	6.6–16.4	2.7–3.1
Ages 20–69									
AS Rate (A)	4.0	3.9	3.7	4.8	3.7	6.1	3.3	13.3	4.1
95% CI	3.6–4.5	3.4–4.5	3.0–4.3	3.8–5.8	2.8–4.5	4.1–8.1	1.2–5.4	7.4–19.3	3.8–4.4
AS Rate (W)	3.9	3.9	3.6	4.8	3.6	6.0	3.6	13.7	4.0
95% CI	3.6–4.5	3.4–4.5	3.0–4.3	3.8–5.8	2.8–4.5	4.1–8.1	1.0–5.5	7.0–19.6	3.8–4.4

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) Mortality data in this table are based on year of death.

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

Source: AIHW Mortality Database.

Table A24: Number of deaths from cervical cancer by age, State and Territory, 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	1	0	0	0	0	0	0	0	1
20–24	0	2	2	0	0	0	0	0	4
25–29	0	3	5	2	1	0	1	0	12
30–34	8	8	7	7	2	1	0	0	33
35–39	28	15	13	11	5	3	0	2	77
40–44	35	14	12	6	3	2	3	1	76
45–49	43	22	14	11	5	4	4	5	108
50–54	37	17	16	8	2	2	3	0	85
55–59	33	15	20	12	9	6	2	1	98
60–64	35	22	20	6	8	9	1	2	103
65–69	45	33	17	12	5	4	2	2	120
70–74	57	38	27	8	12	6	2	1	151
75–79	47	29	31	5	11	6	1	1	131
80–84	33	30	14	9	14	1	1	0	102
85+	39	24	12	16	9	3	2	0	105
Total	441	272	210	113	86	47	22	15	1206

Note: Mortality data from 1993–1996 based on year of death and 1997 based on year of registration.
Source: AIHW Mortality Database.

Table A25: Age-specific and age-standardised death rates for cervical cancer by age, by State and Territory, 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	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20–24	0.0	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.1
25–29	0.0	0.4	1.0	0.7	0.5	0.0	1.9	0.0	0.4
30–34	0.8	1.1	1.4	2.5	0.9	1.4	0.0	0.0	1.1
35–39	2.8	2.1	2.5	3.8	2.1	4.0	0.0	6.5	2.6
40–44	3.8	2.0	2.4	2.2	1.4	2.8	6.0	3.7	2.8
45–49	5.1	3.5	3.0	4.4	2.4	6.1	8.2	22.4	4.2
50–54	5.2	3.3	4.2	4.1	1.2	3.7	8.4	0.0	4.1
55–59	5.8	3.6	6.8	7.9	6.5	13.5	8.2	10.4	5.9
60–64	6.9	5.9	8.1	4.7	6.4	22.9	5.5	31.3	7.1
65–69	9.0	9.0	7.1	10.0	3.9	10.5	12.7	45.5	8.5
70–74	12.2	11.1	12.5	7.6	9.7	16.9	14.0	33.1	11.5
75–79	13.1	11.3	18.4	6.3	11.5	21.3	9.8	51.4	13.1
80–84	13.1	16.3	12.0	15.3	20.6	4.9	15.3	0.0	14.4
85+	19.0	15.4	12.7	32.3	15.9	19.3	41.9	0.0	18.1
All ages									
AS Rate (A)	3.0	2.5	2.9	3.0	2.2	4.3	3.8	7.8	2.9
95% CI	2.8–3.3	2.3–2.8	2.6–3.3	2.5–3.4	1.8–2.7	3.3–5.4	2.4–5.2	4.0–11.7	2.7–3.0
AS Rate (W)	2.3	1.9	2.2	2.3	1.6	3.5	3.0	6.2	2.2
95% CI	2.1–2.5	1.7–2.1	2.0–2.5	1.9–2.7	1.3–2.0	2.6–4.4	1.9–4.2	3.4–9.3	2.1–2.3
Ages 20–69									
AS Rate (A)	3.2	2.5	3.0	3.4	2.0	5.0	4.1	9.0	3.0
95% CI	2.9–3.5	2.2–2.9	2.6–3.4	2.7–4.0	1.5–2.6	3.6–6.5	2.4–6.1	4.7–13.9	2.8–3.2
AS Rate (W)	3.2	2.5	3.0	3.3	2.0	5.0	4.2	8.9	3.0
95% CI	2.8–3.5	2.1–2.8	2.6–3.4	2.7–3.9	1.5–2.6	3.6–6.6	2.4–6.1	4.6–13.8	2.8–3.2

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) Mortality data from 1995–1996 based on year of death and 1997 based on year of registration.

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

Source: AIHW Mortality Database.

Indicator 9: Mortality by location

Table A26: Number of deaths from cervical cancer by age and location, 1993–1995 to 1995–1997

	Metropolitan			Rural			Remote		
Age group	1993–95	1994–96	1995–97	1993–95	1994–96	1995–97	1993–95	1994–96	1995–97
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	1	1	0	0	0	0	0	0
20–24	0	1	1	0	0	0	0	0	0
25–29	8	8	3	2	2	3	1	0	0
30–34	16	21	19	12	9	9	1	1	0
35–39	38	39	43	11	9	13	3	2	1
40–44	58	42	35	22	26	21	3	2	1
45–49	67	70	62	19	24	23	6	6	7
50–54	65	55	44	26	20	16	4	3	2
55–59	57	59	57	21	22	24	4	3	1
60–64	54	51	44	23	20	27	4	5	3
65–69	66	66	66	35	35	28	6	5	5
70–74	85	86	84	30	32	36	2	2	3
75–79	64	73	75	26	27	29	1	1	1
80–84	55	57	52	23	20	22	1	0	2
85+	47	53	57	21	15	17	0	0	0
Total	681	682	643	271	261	268	36	30	26

Notes: (1) Deaths derived from place of usual residence and not place of death.

(2) Mortality data from 1983–1996 based on year of death and 1997 based on year of registration.

(3) The number of deaths are presented as 3-year rolling blocks of data.

(4) Years refer to calendar years.

Source: AIHW Mortality Database.

Table A27: Age-specific and age-standardised death rates for cervical cancer by age and location, 1993–1995 to 1995–1997

	Metropolitan			Rural			Remote		
Age group	1993–95	1994–96	1995–97	1993–95	1994–96	1995–97	1993–95	1994–96	1995–97
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	0.1	0.1	0.1	0	0	0	0	0	0
20–24	0	0.1	0.1	0	0	0	0	0	0
25–29	0.5	0.5	0.2	0.4	0.4	0.7	1.4	0	0
30–34	1.01	1.3	1.2	2.2	1.7	1.7	1.4	1.4	0
35–39	2.5	2.6	2.8	2.1	1.6	2.4	4.7	3.1	1.5
40–44	4.1	2.9	2.4	4.4	5.1	4.1	5.6	3.7	1.9
45–49	5.2	5.2	4.6	4.3	5.2	5.0	13.3	13.0	15.2
50–54	6.7	5.4	4.3	7.3	5.4	4.3	11.8	8.6	5.7
55–59	7.1	7.1	6.8	6.5	6.7	7.3	15.3	11.2	3.7
60–64	7.2	6.9	5.9	7.5	6.5	8.8	19.4	24.2	14.5
65–69	8.8	8.9	8.9	11.7	11.6	9.3	35.8	29.4	29.4
70–74	12.7	12.5	12.2	11.6	12.1	13.6	15.6	15.4	23.1
75–79	13.0	14.5	14.9	13.8	14.0	15.1	11.3	11.2	11.2
80–84	15.4	15.4	14	17.2	14.4	15.8	16.3	0.0	31.4
85+	16.9	18.2	19.6	20.8	14.0	15.9	0.0	0.0	0
All ages									
AS Rate (A)	3.2	3.1	2.9	3.4	3.3	3.3	6.2	5.2	4.7
95% CI	3.0–3.5	2.9–3.4	2.7–3.2	3.0–3.9	2.9–3.7	2.9–3.7	4.1–8.3	3.3–7.1	2.9–6.6
AS Rate (W)	2.5	2.4	2.2	2.7	2.5	2.6	5.2	4.4	3.7
95% CI	2.3–2.7	2.2–2.6	2.1–2.4	2.3–3.0	2.2–2.9	2.2–2.9	3.4–6.9	2.8–6.0	2.3–5.2
Ages 20–69									
AS Rate (A)	3.5	3.3	3.0	3.8	3.6	3.6	8.3	7.1	5.4
95% CI	3.2–3.8	3.0–3.6	2.7–3.3	3.2–4.3	3.1–4.2	3.0–4.1	5.4–11.3	4.3–9.9	2.9–7.7
AS Rate (W)	3.5	3.3	2.9	3.7	3.6	3.5	8.3	7.1	5.4
95% CI	3.2–3.9	3.0–3.6	2.7–3.3	3.2–4.3	3.1–4.2	3.0–4.1	5.4–11.3	4.4–9.9	3.0–7.7

Notes: (1) Deaths derived from place of usual residence and not place of death.

(2) Mortality data from 1983–1996 based on year of death and 1997 based on year of registration.

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

(4) The age-standardised rates are presented as 3-year rolling blocks of data.

(5) Years refer to calendar years.

Source: AIHW Mortality Database.

Indicator 10: Indigenous mortality

Table A28: Number of deaths from cervical cancer by age, by Indigenous and non-Indigenous status, SA, WA, NT, 1993 –1995 to 1995–1997

	Indigenous			Non-Indigenous		
Age group	1993–1995	1994–1996	1995–1997	1993–1995	1994–1996	1995–1997
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	1	1	1
20–24	0	0	0	1	1	1
25–29	0	0	0	10	11	7
30–34	0	0	0	30	30	26
35–39	0	0	0	52	49	58
40–44	1	1	1	80	69	54
45–49	5	4	7	94	102	93
50–54	3	0	0	96	77	64
55–59	1	1	2	85	86	83
60–64	2	3	2	81	78	74
65–69	2	3	3	109	105	97
70–74	1	2	3	115	118	121
75+	1	0	1	239	249	256
Total	16	14	19	993	976	935

Note: (1) Only South Australia, Western Australia and the Northern Territory have Indigenous death registration data considered to be of a publishable standard.

(2) Mortality data from 1993–1996 based on year of death and 1997 based on year of registration.

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

(4) The number of deaths are presented as 3-year rolling blocks of data.

Source: AIHW Mortality Database.

Table A29: Age-specific and age-standardised death rates for cervical cancer by age, by Indigenous and non-Indigenous status, SA, WA, NT, 1993–1995 to 1995–1997

	Indigenous			non-Indigenous		
Age group	1993–1995	1994–1996	1995–1997	1993–1995	1994–1996	1995–1997
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	0.1	0.1	0.1
20–24	0.0	0.0	0.0	0.1	0.1	0.1
25–29	0.0	0.0	0.0	0.5	0.5	0.3
30–34	0.0	0.0	0.0	1.4	1.4	1.2
35–39	0.0	0.0	0.0	2.5	2.3	2.7
40–44	11.1	10.5	11.4	4.1	3.4	2.7
45–49	71.1	54.7	107.0	5.3	5.5	4.9
50–54	61.1	0.0	0.0	7.0	5.4	4.2
55–59	23.4	23.7	54.8	7.4	7.2	6.8
60–64	62.3	90.5	69.4	7.6	7.3	6.9
65–69	88.3	127.3	139.7	10.2	9.9	9.2
70–74	76.8	146.8	239.0	12.2	12.2	12.4
75+	53.1	0.0	58.3	15.2	15.3	15.2
All ages						
AS Rate (A)	19.8	18.2	27.6	3.4	3.2	3.0
95% CI	9.1–28.8	8.2–29.0	13.1–37.5	2.5–3.4	2.2–3.0	1.9–2.8
AS Rate (W)	16.7	15.2	22.2	2.6	2.5	2.3
95% CI	8.1–24.5	7.1–23.7	11.0–30.2	2.1–2.9	1.8–2.6	1.6–2.3
Ages 20–69						
AS Rate (A)	24.1	22.0	28.5	3.7	3.5	3.1
95% CI	11.0–37.2	9.0–35.1	12.7–41.1	3.2–4.5	2.8–4.1	2.5–3.7
AS Rate (W)	25.1	22.0	29.0	3.7	3.5	3.1
95% CI	10.7–37.5	9.3–34.8	12.7–41.1	3.1–4.5	2.8–4.1	2.5–3.7

Note: (1) Only South Australia, Western Australia and the Northern Territory have Indigenous death registration data considered to be of a publishable standard.

(2) Mortality data from 1993–1996 based on year of death and 1997 based on year of registration.

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

(4) The age-standardised rates are presented as 3-year rolling blocks of data.

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 as it joins the inner end of the vagina. Like other cancers, cervical cancer is a disease where normal cells change, begin to multiply out of control, and form a growth or tumour. If not caught early enough, 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 sometimes an unusual vaginal discharge. However, these symptoms may not be due to cancer.

A cervical cancer may take 10 or more years to develop, but before this the cells may show pre-cancerous changes. These early changes can be detected by a Pap smear which is described in more detail below, and with early treatment there is an excellent chance of a full recovery. There are two levels of severity of these pre-cancerous lesions, low-grade abnormalities and high-grade abnormalities, with the higher grade lesions more likely to progress to a cancer. These are usually graded from warty atypia (HPV effect), atypia, equivocal CIN, possible CIN, endocervical dysplasia NOS, CIN1 to CIN3, and carcinoma *in situ*.

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, hospital outpatient clinics and in some circumstances nurse practitioners.

If a pre-cancerous change is suggested by the Pap smear a doctor is able to look directly at the cervix by inserting an instrument called a colposcope into the vagina. Using a special stain the doctor can highlight any suspicious area, 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 are relatively easily treated and are cured in nearly all cases. 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 cryosurgery (freezing), cauterisation (burning, also called diathermy), laser surgery, or loop or cone biopsies. In a small number of instances a hysterectomy may be necessary, especially if changed cells are found inside the opening of the uterus and the woman does not want to have children in the future.

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

Appendix B: Data sources and limitations

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

Table B1: Cervical cancer screening indicators data sources

Indicator	Description	Data source
1	Participation rate for cervical cancer screening	National Cervical Screening Program
2	Early 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 (ICD 180)	National Cancer Statistics Clearing House
6	Incidence of squamous, adenocarcinoma, adeno-squamous and other cervical cancer (ICD 180)	National Cancer Statistics Clearing House
7	Mortality from cervical cancer (ICD 180)	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 1996 and 1997 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 to 9 include Queensland.

The New South Wales Pap Test register began operations in July 1996 leaving it almost 7 months short of data compared with the other States and Territories. New South Wales advised us that the best way of overcoming this problem was to use a conversion factor of 1.27, which is based on their modelling of screening data and extrapolating back. The Northern Territory Pap smear register began operations in March 1996, and participation rates have been estimated for the period January to March 1996 using a factor of 1.08.

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:

- All States and Territories were able to provide data for the target age group 20–69 years; however, not all programs were able to supply data for women beyond this age group.
- 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.
- 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.

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 rate per l00,000 population. This rate may be calculated for particular age and sex groupings, e.g.

$$\text{Age-specific cervical cancer incidence rates in females aged 50–54} = \frac{\text{New cases 1995 aged 50–54 years}}{\text{1995 female population aged 50–54 years}} \times 100{,}000$$

$$= \frac{12}{475{,}987} \times 100{,}000$$

$$= 260.5 \text{ per } 100{,}000$$

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 Population Standard unless otherwise specified). This effectively removes the influence of age structure on the summary rate that is described as the age-standardised rate. The method may be used for both incidence and mortality calculations. The method used for this calculation comprises three steps.

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

$$\text{CI approximation} = \text{AS Rate} \pm 1.96 \times \frac{\text{AS Rate}}{\sqrt{\text{Number of cases}}}$$

Appendix D: Population data

Table D1: Australian Standard Population[1] and World Standard Population[2]

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

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

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

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

Source: Australian Bureau of Statistics 1995.

Table D3: Estimated resident female populations, by State and Territory, June 1997

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
0–4	213,602	153,004	117,741	61,641	47,117	16,167	10,805	8,754	628,975
5–9	215,452	155,910	120,659	64,705	48,050	17,118	10,981	8,052	641,103
10–14	212,957	153,621	122,265	65,724	49,787	17,717	11,007	7,267	640,506
15–19	208,613	154,677	120,201	63,526	48,055	16,633	12,200	6,573	630,537
20–24	222,995	168,887	128,552	66,530	50,239	15,359	14,108	8,402	675,157
25–29	243,236	185,747	133,382	70,032	53,699	16,493	13,501	9,460	725,686
30–34	241,527	180,658	129,315	69,898	54,861	17,239	12,652	8,419	714,742
35–39	250,552	183,985	135,043	73,076	58,587	19,143	13,021	7,723	741,273
40–44	231,972	172,446	125,622	69,750	55,418	17,846	12,457	6,796	692,443
45–49	213,725	159,502	117,362	62,781	52,430	16,375	12,263	5,713	640,228
50–54	182,009	133,847	98,769	49,912	44,573	13,841	9,382	4,135	536,531
55–59	144,389	106,269	75,098	39,083	34,991	11,294	6,170	2,497	419,831
60–64	127,041	93,703	62,228	32,483	31,324	9,820	4,551	1,611	362,779
65–69	125,247	90,505	59,640	30,029	31,355	9,473	3,923	1,111	351,299
70–74	117,239	85,779	54,277	26,452	31,035	8,838	3,599	774	327,997
75–79	91,554	65,723	43,003	20,398	24,558	7,169	2,596	494	255,497
80–84	63,698	46,473	29,632	14,781	17,125	5,130	1,682	297	178,825
85+	53,221	40,121	24,362	12,919	14,683	4,041	1,235	238	150,822
Total	3,159,029	2,330,857	1,697,151	893,720	747,887	239,696	156,133	88,316	9,314,231

Source: Australian Bureau of Statistics 1997.

Table D4: Estimated resident female populations, by State and Territory, 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: Australian Bureau of Statistics 1998

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 II (moderate dysplasia) and CIN III (severe dysplasia and carcinoma in situ). CIN usually occurs at least a decade before cervical cancer. If CIN remains untreated, some women will develop cervical cancer while others will progress to invasive cervical cancer, despite treatment (Jelfs 1995).

Colposcopy: 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).

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.

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 froming 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.

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

Mammogram: a radiographic depiction of the breast.

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.

The Institute: The Australian Institute of Health and Welfare.

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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