

Cervical Screening in Australia 2002–2003

The Australian Institute of Health and Welfare is Australia's national health and welfare statistics and information agency. The Institute's mission is *better health and wellbeing for Australians through better health and welfare statistics and information.*

Cancer Series

Number 31

Cervical Screening in Australia

2002–2003

**The Australian Institute of Health and Welfare
and
Australian Government Department of Health and Ageing
for the
National Cervical Screening Program**

October 2005

Australian Institute of Health and Welfare
Canberra

AIHW cat. no. CAN 26

© Australian Institute of Health and Welfare 2005

This work is copyright. Apart from any use as permitted under the *Copyright Act 1968*, no part may be reproduced without prior written permission from the Australian Institute of Health and Welfare. Requests and enquiries concerning reproduction and rights should be directed to the Head, Business Promotion and Media, Australian Institute of Health and Welfare,
GPO Box 570, Canberra ACT 2601.

This publication is part of the Australian Institute of Health and Welfare's Cancer Series. A complete list of the Institute's publications is available from the Publications Unit, Australian Institute of Health and Welfare, GPO Box 570, Canberra ACT 2601, or via the Institute's website <www.aihw.gov.au>.

ISSN 1039 3307

ISBN 1 74024 513 X

Suggested citation

Australian Institute of Health and Welfare (AIHW) 2005. *Cervical Screening in Australia 2002–2003*. AIHW Cat. No. 26. Canberra: Australian Institute of Health and Welfare (Cancer Series number 31).

Australian Institute of Health and Welfare

Board Chair

Hon. Peter Collins, AM, QC

Director

Dr Richard Madden

Any enquiries about or comments on this publication should be directed to:

Dr Chris Stevenson

Australian Institute of Health and Welfare

GPO Box 570

Canberra ACT 2601

Phone: (02) 6244 1041

Published by Australian Institute of Health and Welfare

Printed by Elect Printing

Contents

- List of tablesvii
- List of figures x
- Acknowledgments..... xi
- Summaryxii
- National cervical screening monitoring indicators..... 1**
- Participation 5**
- Indicator 1: Participation rate for cervical screening..... 7
- Early re-screening 10**
- Indicator 2: Early re-screening..... 11
- Low-grade abnormalities 13**
- Indicator 3: Low-grade abnormality detection..... 14
- High-grade abnormalities 15**
- Indicator 4: High-grade abnormality detection..... 16
- Incidence 19**
- Indicator 5.1: Incidence of micro-invasive cervical cancer..... 20
- Indicator 5.2: Incidence of squamous, adenocarcinoma, adenosquamous and other
cervical cancers..... 22
- Indicator 5.3: Incidence by location..... 26
- Mortality..... 27**
- Indicator 6.1: Mortality..... 28
- Indicator 6.2: Mortality by location 31
- Indicator 6.3: Indigenous mortality 33
- Tables 35**
- Appendixes 69**
- Appendix A: Cervical cancer – symptoms, detection and treatment..... 69
- Appendix B: Data sources and limitations 71
- Appendix C: Methods..... 73
- Appendix D: Population data 75
- Appendix E: National Cervical Screening Programs contact list..... 83
- Appendix F: NHMRC guidelines for the management of women with screen-detected
abnormalities 85

Glossary	87
References	89
Related publications	91

List of tables

Table 1:	The Remoteness Areas for the ASGC Remoteness Classification.....	3
Table 1a:	Number of women participating in the National Cervical Screening Program by age, states and territories, 2000–2001	35
Table 1b:	Proportion of women participating in the National Cervical Screening Program by age, states and territories, 2000–2001	36
Table 2a:	Number of women participating in the National Cervical Screening Program by age, states and territories, 2002–2003.....	37
Table 2b:	Proportion of women participating in the National Cervical Screening Program by age, states and territories, 2002–2003	38
Table 3:	Number of women with repeat screenings in the 21 months following a negative Pap smear in the 2002 cohort, states and territories, and Australia 2001 and 2002 cohorts.....	39
Table 4:	Percentage of women with repeat screenings in the 21 months following a negative Pap smear in the 2002 cohort, states and territories, and Australia 2001 and 2002 cohorts.....	39
Table 5a:	Number of low- and high-grade abnormalities on histology for women aged 20–69 years, states and territories, 2002	40
Table 5b:	Number of low- and high-grade abnormalities on histology for women aged 20–69 years, states and territories, 2003	40
Table 6a:	Rate of histologically confirmed high-grade abnormalities per 1,000 women screened by age, states and territories, 2002	41
Table 6b:	Rate of histologically confirmed high-grade abnormalities per 1,000 women screened by age, states and territories, 2003	42
Table 7a:	Number of histologically confirmed high-grade abnormalities by age, states and territories, 2002	43
Table 7b:	Number of histologically confirmed high-grade abnormalities by age, states and territories, 2003	44
Table 8a:	Number of women screened by age, states and territories, 2002.....	45
Table 8b:	Number of women screened by age, states and territory, 2003	46
Table 9a:	Age-standardised high-grade abnormality rate on histology per 1,000 women screened aged 20–69 years, states and territories, 2002.....	47
Table 9b:	Age-standardised high-grade abnormality rate on histology per 1,000 women screened aged 20–69 years, states and territories, 2003.....	47
Table 10:	New cases of micro-invasive cervical cancer by age, Australia, 1990–2001	48
Table 11:	Age-specific and age-standardised incidence rates of micro-invasive cervical cancer by age, Australia, 1990–2001.....	49
Table 12:	New cases of cervical cancer by age, Australia, 1990–2001	50

Table 13:	Age-specific and age-standardised incidence rates of cervical cancer by age, Australia, 1990–2001	51
Table 14a:	New cases of cervical cancer by age, states and territories, 1994–1997	52
Table 14b:	Age-specific and age-standardised incidence rates of cervical cancer, states and territories, 1994–1997	53
Table 15a:	Number of new cases of cervical cancer by age, states and territories, 1998–2001	54
Table 15b:	Age-specific and age-standardised incidence rates of cervical cancer, states and territories, 1998–2001	55
Table 16a:	New cases of cervical cancer by histological type for women aged 20–69 years, Australia, 1990–2001.....	56
Table 16b:	Age-standardised incidence rates for cervical cancer by histological type for women aged 20–69 years, Australia, 1990–2001.....	56
Table 17a:	New cases of cervical cancer by histological type for women, all ages 0–85+ years, Australia, 1990–2001	57
Table 17b:	Age-standardised incidence rates for cervical cancer by histological type for women, all ages 0–85+ years, Australia, 1990–2001.....	57
Table 18:	New cases of cervical cancer by age and location, 1994–1997 and 1998–2001	58
Table 19:	Age-specific and age-standardised incidence rates for cervical cancer by age and location, 1994–1997 and 1998–2001.....	59
Table 20:	Deaths from cervical cancer by age, Australia, 1983–2003.....	60
Table 21:	Age-specific and age-standardised death rates for cervical cancer by age, Australia, 1983–2003.....	61
Table 22:	Deaths from cervical cancer by age, states and territories, 1996–1999	62
Table 23:	Age-specific and age-standardised death rates for cervical cancer by age, states and territories, 1996–1999	63
Table 24:	Deaths from cervical cancer by age, states and territories, 2000–2003	64
Table 25:	Age-specific and age-standardised death rates for cervical cancer by age, states and territories, 2000–2003	65
Table 26:	Deaths from cervical cancer by age and location, 1996–1999 and 2000–2003.....	66
Table 27:	Age-specific and age-standardised death rates for cervical cancer by age and location, 1996–1999 and 2000–2003.....	67
Table 28:	Number of deaths and age-specific and age-standardised death rates for cervical cancer by age and Indigenous status, Queensland, South Australia, Western Australia and Northern Territory, 2000–2003	68
Table B1:	Cervical cancer screening indicators data sources.....	71
Table D1:	Australian Standard Population and WHO World Standard Population.....	75

Table D2:	Hysterectomy fractions for women aged 15–80+ years, Australia, 2001	76
Table D3:	Estimated resident female populations, states and territories, June 2000	77
Table D4:	Estimated resident female populations, states and territories, June 2001	78
Table D5:	Estimated resident female populations, states and territories, June 2002	79
Table D6:	Estimated resident female populations, states and territories, June 2003	80
Table D7:	Estimated resident female populations, by age and location, for the 4-year periods 1996–1999 and 2000–2003	81
Table D8:	Estimated resident Indigenous and other Australian female populations for Queensland, Western Australia, South Australia and the Northern Territory, for the 4-year period 2000–2003	82

List of figures

Figure 1:	Participation in the National Cervical Screening Program by age group, Australia, 2000–2001 and 2002–2003	7
Figure 2:	Participation (age-standardised) in the National Cervical Screening Program by women aged 20–69 years, states and territories, 2000–2001 and 2002–2003	9
Figure 3:	Proportion of women re-screened by number of screens during the 21-month period following a negative Pap smear in the 2001 and 2002 cohorts, Australia .	11
Figure 4:	Proportion of women re-screened by number of screens during the 21-month period following a negative Pap smear in the 2002 cohort, states and territories	12
Figure 5:	Ratio of low-grade to high-grade abnormalities in women aged 20–69 years, states and territories, 2002 and 2003.....	14
Figure 6:	High-grade abnormalities per 1,000 women by age group, Australia, 2002 and 2003.....	16
Figure 7:	Age-standardised rate of high-grade abnormalities per 1,000 women screened aged 20–69 years, states and territories, 2002 and 2003	18
Figure 8:	Age-standardised incidence rates for micro-invasive squamous cell cancer, women aged 20–69 years, Australia, 1990–2001	20
Figure 9:	Age-specific incidence rates of micro-invasive squamous cell cancer, women aged 20–69 years, Australia, 2000 and 2001	21
Figure 10:	Age-standardised incidence rates of cervical cancer, Australia, 1990–2001	22
Figure 11:	Age-specific incidence rates of cervical cancer, Australia, 2000 and 2001	23
Figure 12:	Age-standardised cervical cancer incidence rates in women aged 20–69 years, states and territories, 1994–1997 and 1998–2001	24
Figure 13:	Age-standardised incidence rates of cervical cancer by histological type, women aged 20–69 years, Australia, 1990–2001	25
Figure 14:	Age-standardised incidence rates of cervical cancer in women aged 20–69 years, by location, Australia, 1994–1997 and 1998–2001.....	26
Figure 15:	Age-standardised death rates from cervical cancer, Australia, 1983–2003.....	28
Figure 16:	Age-specific cervical cancer death rates by age group, Australia, 1990–1993 and 2000–2003.....	29
Figure 17:	Age-standardised cervical cancer death rates in women aged 20–69 years, states and territories, 1996–1999 and 2000–2003	30
Figure 18:	Age-standardised cervical cancer death rates by location, women aged 20–69 years, 1996–1999 and 2000–2003	31
Figure 19:	Age-standardised cervical cancer mortality rates by Indigenous status, women aged 20–69 years (Queensland, Western Australia, South Australia and Northern Territory), 2000–2003.....	33

Acknowledgments

The financial support and professional assistance of the Cancer Screening Section in the Australian Government Department of Health and Ageing is gratefully acknowledged.

The authors of this report are Ms Edith Christensen, Ms Janet Markey, Dr Chris Stevenson, and Mr John Harding from the Australian Institute of Health and Welfare. The authors wish to extend their gratitude to those people working in the National Cervical Screening Program who provided data and comments for this report. The authors also acknowledge the input of the members of the Monitoring and Evaluation Working Group of the Australian Screening Advisory Committee, and the Australasian Association of Cancer Registries.

National Cervical Screening Program

New South Wales

Ms Jayne Ross

Mr Hassan Mamoon

Ms Liz Martin

Victoria

Dr Heather Mitchell

Ms Cathy Burrows

Mr Rory Wilby

Queensland

Ms Jennifer Muller

Mr Nathan Dunn

Western Australia

Ms Gillian Mangan

Ms Nerida Steel

South Australia

Ms Sue Gilchrist

Ms Penny Iosifidis

Tasmania

Ms Gail Raw

Mr Paul Chandler

Australian Capital Territory

Ms Helen Sutherland

Mr Peter Couvee

Ms Coral Swan

Northern Territory

Ms Gai Allcock

Mr Guillermo Enciso

Australian Government Department of Health and Ageing

Ms Andriana Koukari

Ms Maryellen Moore

Summary

This report is the seventh national report on the performance of the National Cervical Screening Program in Australia. Cervical screening services are provided as part of mainstream health services with general practitioners performing the great majority of Pap smears. The program is funded by the Australian Government and the state and territory governments.

This report presents statistics on the national performance monitoring indicators for the program. These were developed by the National Advisory Committee to the program; in 2004 this committee was replaced by the Australian Screening Advisory Committee.

Overview

The major goals of the Program are to reduce incidence and mortality through screening to detect abnormalities of the cervix early so that medical intervention can avert the possible progression to cervical cancer.

The statistics in this report indicate that the Program is continuing to be very successful in meeting this goal. The treatment of high-grade intraepithelial abnormalities has reduced the incidence of cervical cancer among women aged 20–69 from 17.1 per 100,000 women in 1991 to 9.5 in 2001, and mortality has declined from 3.8 per 100,000 women in 1993 to 2.2 in 2003.

The age-standardised participation rate among women in the target age range of 20–69 years for 2002–2003 was 60.7%; this is a small decline from 61.0% in 2000–2001. This is partly due to improvements in measurement by the screening programs of participation. However, the level of participation suggests that there is room for further improvement in the level of screening. This is of particular importance for Indigenous women whose cervical cancer incidence rate was higher than for other Australian women in the Northern Territory, Queensland, South Australia, Western Australia, the only jurisdictions for which adequate data were available (ABS & AIHW 2005).

The main features in this report are as follows.

Participation

- From January 2002 to December 2003 there were 3,382,825 women screened in Australia for pre-cancerous changes to cervical cells; the target age group, 20–69 years, accounted for 98% of the women screened.
- There was a decline in participation among younger women (20–44 years) and an improvement in participation for older women (45–69 years) in 2002–2003 when compared with 2000–2001; however, these changes were relatively small. Screening is particularly important for older women because they experience a relatively high incidence of cervical cancer.

Early re-screening

The recommended screening interval is 2 years following a negative smear.

- Of a cohort of women screened in February 2002 (except for Queensland where the 21-month period starts in March) who had a negative Pap smear result, 28% had a Pap smear or were screened again within 21 months. It is not known what proportion of this early re-screening is justified on clinical grounds.

- There has been a decline in the proportion of women following a normal Pap smear who are being re-screened within 21 months. For the 2002 cohort the early re-screening rate was 28%, whereas for the 2001 cohort it was 29.3%.

Detection of abnormalities

A low-grade abnormality includes atypia, warty atypia, possible cervical intraepithelial neoplasia (CIN), equivocal CIN, and CIN 1. A high-grade abnormality is defined to include CIN 1/2, CIN 2 and CIN 3 and adenocarcinoma in situ.

- The ratio of histologically confirmed low-grade abnormalities to high-grade abnormalities was 1.24 for Australia in 2003 compared with 1.26 in 2002; the ratio has fluctuated each year between 1.24 and 1.47 since 1997.
- In 2003, the National Cervical Screening Program detected 14,745 women in the target age group 20–69 years with high-grade abnormalities. In 2000, the first year when data for all jurisdictions were included, the rate was 7.5 per 1,000 women screened; the rate was also 7.5 in 2003.
- The number of high-grade abnormalities detected per 1,000 women screened was highest in the younger age groups. For women under 30 years of age, the rate of high-grade abnormalities was over 16 per 1,000 women screened whereas it was less than 2 per 1,000 for women aged 50–69 years.

Incidence and mortality

- The number of new cases of cervical cancer in Australia has continued to decline. There were 735 new cases in Australia in 2001 compared with 1,078 detected in 1990 before the start of the organised screening program.
- In 2001 there were 98 new cases of micro invasive cancer for all women; all but 7 of these women were in the target age group, 20–69 years. The highest detection rates were for women in the 30–34 and 45–49 age groups.
- Cervical cancer is the 18th most common cause of cancer mortality in women, accounting for 227 and 238 deaths in 2002 and 2003 respectively compared with 337 in 1990 before the start of the organised program. Although there was some fluctuation from year to year, the age-standardised mortality rate from cervical cancer declined between 1983 and 2003. For all women there was a decline from 64.0 deaths per 100,000 women in 1983 to 2.2 per 100,000 women in 2003. During the same period, for women in the target age group of 20–69 years, the rate declined from 5.4 per 100,000 to 2.2 per 100,000.
- Women in the target age group from remote locations experienced relatively high incidence and mortality rates from cervical cancer compared with women in major cities. The differences were not statistically significant. However, between the periods 1996–1999 and 2000–2003, the age-standardised cervical cancer mortality rate declined in all regions (major cities, regional and remote).
- Before 1998, only Western Australia, South Australia and the Northern Territory had Indigenous mortality registration data of sufficient quality to be publishable. In 1998, Queensland's coverage of Indigenous deaths reached an acceptable level to be included in the analysis of Indigenous mortality data. For these four jurisdictions, in the period 2000–2003 there were 25 deaths from cervical cancer among Indigenous women in the target age group (an age-standardised mortality rate of 12.0 per 100,000 women). This is almost five times the corresponding rate in other Australian women (2.5 per 100,000 in 2000–2003).

One year to 5 year comparison table for national data for all indicators

Indicator	Latest reporting period		Previous reporting period		Five years ago	
	Year	Rate	Year	Rate	Year	Rate
Participation in 24-month period (%)	2002–2003	60.7%	2000–2001	61.0%	1997–1998	63.9%
Early re-screening within 21 months of negative Pap smear	February 2002 cohort	28%	February 2001 cohort	29.2%	Not available ^(a)	
Ratio of low- and high-grade abnormalities	2003	1.24	2002	1.26	1998	1.35
High-grade abnormalities per 1,000 women screened (age-standardised rate)	2003	7.5	2002	7.5	1998	6.7 ^(b)
Incidence of cervical cancer per 100,000 women (age-standardised rate)	2001	9.5	2000	9.7	1996	13.4
Mortality from cervical cancer per 100,000 women (age-standardised rate)	2003	2.2	2002	2.1	1998	2.7

(a) The indicator reported on a 24 month period following a negative Pap smear up to and including 1998; in 1999 the indicator was changed to a 21-month interval.

(b) This age-standardised rate is not comparable to those for 2002 and 2003 because in 1998 data were not available for all jurisdictions. In addition, the 1998 age-standardised rate was standardised to the 1991 Australian population whereas the rates for 2002 and 2003 were standardised to the 2001 Australian population.

National cervical screening monitoring indicators

This report monitors the performance of the National Cervical Screening Program using ten indicators which measure program activity, performance and outcome. These indicators help measure changes in disease patterns and examine the contribution of cervical screening to preventing or reducing deaths from cancer of the cervix.

Screening indicators for the National Cervical Screening Program cover the areas of participation, early re-screening, low- and high-grade abnormality detection, incidence and mortality. These were developed and endorsed by the former National Advisory Committee and by state and territory cervical screening programs. A listing of the ten indicators and their definitions follows. The target age group for the National Cervical Screening Program is 20–69 years.

Indicator 1: Participation rate for cervical screening

Percentage of women screened in a 24-month period by 5-year age groups (20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, 60–64, 65–69), for all ages (20–80+) and the target age group (20–69 years).

Indicator 2: Early re-screening

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

Indicator 3: Low-grade abnormality detection

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

Indicator 4: High-grade abnormality detection

Detection rate for histologically verified high-grade intraepithelial abnormalities per 1,000 women screened in a 12-month period by 5-year age groups (20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84, 85+) and for the target age group (20–69 years, age-standardised).

Indicator 5.1: Incidence of micro-invasive squamous cell carcinoma

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

Indicator 5.2: Incidence of squamous, adenocarcinoma, adenosquamous and other cervical cancer

Incidence rate of squamous, adenocarcinoma, adenosquamous and other cervical cancers (micro-invasive and invasive) 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 6.1: Mortality

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

Periodic indicators

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

Periodic incidence and mortality indicators by location

Geographic region

In reports before 2000–2001, analysis of incidence and mortality data by geographic region used the Rural, Remote and Metropolitan Areas (RRMA) classification. This classification was developed in 1994 by the then Department of Primary Industries and Energy and the then Department of Human Services and Health. It allows geographic regions to be classified into seven zones – two metropolitan, three rural and two remote zones.

This report uses a more recent geographic classification instead of the RRMA classification. The new system, known as the Australian Standard Geographical Classification (ASGC), groups geographic areas into five classes. These classes are based on Census Collection Districts (CDs) and defined using the Accessibility/Remoteness Index for Australia (ARIA). ARIA is a measure of the remoteness of a location from the services provided by large towns or cities. A higher ARIA score denotes a more remote location. The five classes of the ASGC, along with a sixth 'Migratory' class, are listed in Table 1.

Table 1: The remoteness areas for the ASGC

Region	Collection districts within region
Major cities of Australia	CDs with an average ARIA index value of 0 to 0.2
Inner regional Australia	CDs with an average ARIA index value greater than 0.2 and less than or equal to 2.4
Outer regional Australia	CDs with an average ARIA index value greater than 2.4 and less than or equal to 5.92
Remote Australia	CDs with an average ARIA index value greater than 5.92 and less than or equal to 10.53
Very remote Australia	CDs with an average ARIA index value greater than 10.53
Migratory	Areas composed of off-shore, shipping and migratory CDs

Source: ABS 2001.

The ASGC is not directly comparable to the RRMA classification. Accessibility is judged purely on distance to one of the metropolitan centres. For example, the ASGC allocates Hobart to its second group (Inner regional Australia) and Darwin to its third group (Outer regional Australia), whereas the RRMA classification grouped them together with the other capital cities.

Indicator 5.3: Incidence by location

Incidence rate of cervical cancer per 100,000 estimated resident female population in a 4-year period by location and 5-year age groups (20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84, 85+) and for the target age group (20–69 years, age-standardised).

Indicator 6.2: Mortality by location

Death rate from cervical cancer per 100,000 estimated resident female population in a 4-year period by location and 5-year age groups (20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84, 85+) and for the target age group (20–69 years – age-standardised).

Indicator 6.3: Indigenous mortality

Death rate from cervical cancer per 100,000 estimated resident female population in a 4-year period by Indigenous status and 5-year age groups (20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75+) and for the target age group (20–69 years, age-standardised).

This indicator examines the patterns of mortality among Indigenous women.

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

Confidence intervals

Where indicators include a comparison between states and territories, between time periods, between geographic locations or between Indigenous and other Australian women, a 95% confidence interval is presented along with the rates. This is because the observed value of a rate may vary owing to chance even where there is no variation in the underlying value of the rate. The 95% confidence interval represents a range over which variation in the observed rate is consistent with this chance variation. These confidence intervals can be used as an approximate test of whether changes in a particular rate are consistent with chance variation. Where the confidence intervals do not overlap, the change in a rate is greater than that which could be explained by chance.

For example, the participation rate for Tasmania in 2002–2003 was 63.1% with a confidence interval of 62.6% to 63.5%. The corresponding rate for 2000–2001 was 65.2% with a confidence interval of 64.7% to 65.6%. These two intervals do not overlap, so the difference between the 2000–2001 and 2002–2003 rates is larger than we would expect due to chance alone.

Another example is the comparison between cervical mortality rates for women in the target group in the remote areas. In the period 1996 to 1999 there were 5.2 cervical cancer deaths per 100,000 women in living remote areas. This rate had a confidence interval of 3.2 to 7.6. The 2000–2003 rate for women living in remote areas was 2.7 per 100,000, with a confidence interval of 1.5 to 4.4. These confidence intervals overlap, so despite the relatively large difference between the two observed rates they are still consistent with chance variation. This arises from the fact that remote areas of Australia have small populations, resulting in small numbers of deaths from any specific cause, and these rates may fluctuate from year to year over time. This in turn leads to relatively wide confidence intervals for an observed death rate.

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

Participation

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

The Program, through a variety of recruitment initiatives, focuses on women in the age group 20–69 years. The recommended screening interval for women in this target age group who have 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 previous 5 years. Women over 70 years who have never had a Pap smear, or who request a Pap smear, are screened.

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

- those who have had a total hysterectomy with their cervix removed
- those who have never been sexually active
- women with a previously diagnosed gynaecological cancer.

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

State and territory programs have a range of strategies to increase participation of women in cervical screening. Such strategies include focusing on priority population groups including Indigenous women, rural and remote women, and women from culturally and linguistically diverse backgrounds.

The objectives and usefulness of participation as an indicator are outlined below:

- The participation indicator measures the proportion of the target population covered by the cervical screening program and the current screening policy of a 2-year interval.
- The indicator is important in assessing the contribution of the cervical screening program to changes in incidence and mortality.
- The indicator can be used as a means of evaluating the effect of communication and recruitment strategies, particularly if participation rates are analysed by demographic characteristics.
- When this indicator is used in conjunction with others, it can be used to support analysis relating to target groups and screening intervals.

State- and territory-specific issues

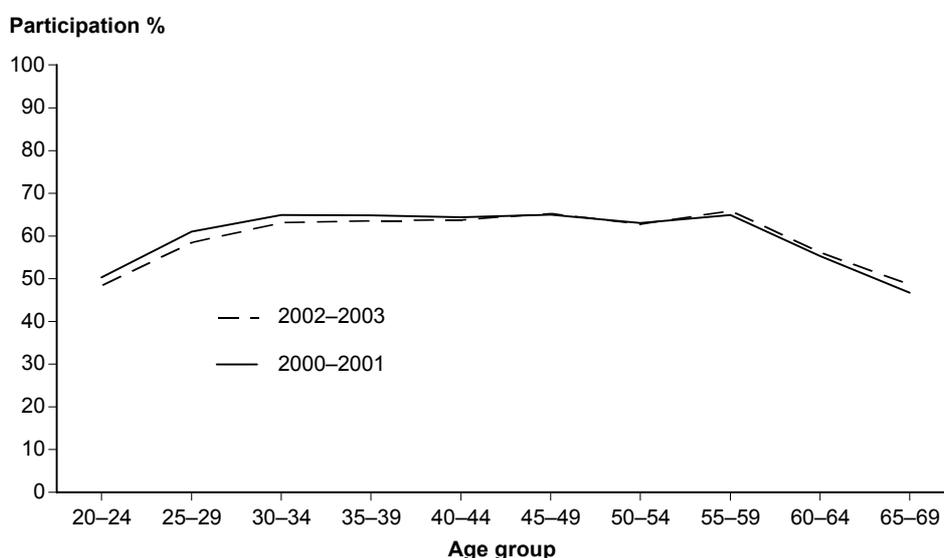
- Except for Victoria and the Australian Capital Territory, the participation rates are based on all women who were screened in the particular state or territory. This may lead to an over-estimation of numbers of women screened because of double counting of some women between states. This may be the result of difficulty in identifying state of residence for women in border areas, and inclusion of women resident overseas.

Data issues

- In 2001 the Australian Bureau of Statistics (ABS) carried out a full population census and a national health survey. These led to the revision of the ABS estimated resident population (ERP) data, the introduction of a new Australian standard population for use in age-standardisation and the production of new estimates of hysterectomy status among Australian women. The denominators for participation rates presented in this report have been calculated using the 2001 ABS National Health Survey hysterectomy fractions and the revised ERP values, and age-adjusted using the 2001 Australian standard population. The denominators for the equivalent rates in previous reports were calculated using the 1995 ABS National Health Survey hysterectomy fractions and unrevised ERP values, and age-adjusted using the 1991 Australian standard population. The combined effect of these changes is that participation rates presented in this report are on average between 1 and 2 percentage points lower than equivalent rates in previous reports.
- Recent fluctuations in participation rates are, in some jurisdictions, partly due to more accurate tracking of individual screening participants over time; this has led to an apparent decrease in recorded participation rates by up to 3 percentage points. There has also been variation over time and between jurisdictions in the use of short-term mass media campaigns which, in addition to any long-term effect, may have led to short-term fluctuations in screening participation.

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+), for all ages (20–80+) and for the target age group (20–69 years).



Refer to Tables 1b and 2b (pages 36 and 38).

Notes

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

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

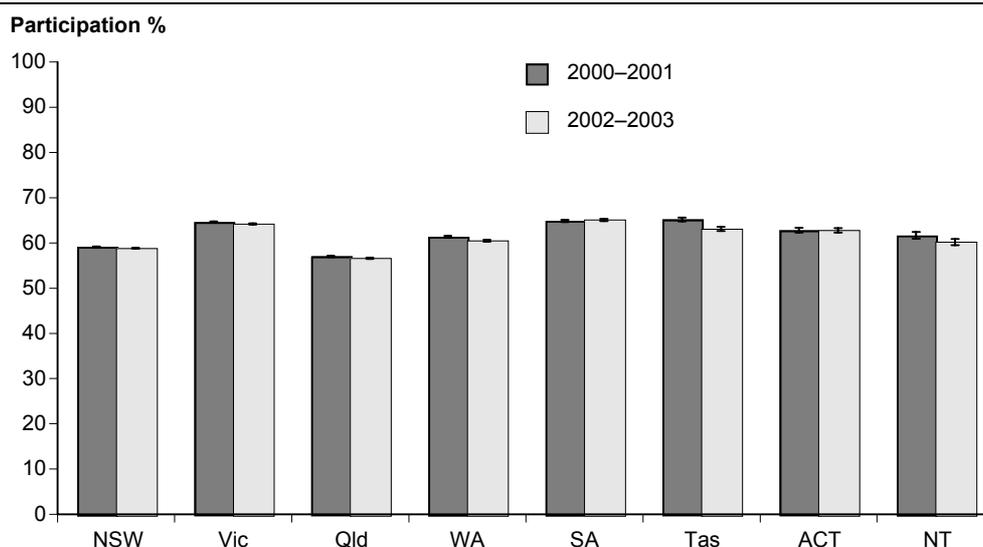
Figure 1: Participation in the National Cervical Screening Program by age group, Australia, 2000–2001 and 2002–2003

24-month period	Age group										20–69*
	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	
	(Per cent)										
2000–2001	50.3	61.0	64.9	64.8	64.4	65.0	63.0	64.9	55.3	46.7	61.0 (60.9–61.1)
2002–2003	49.0	59.0	63.4	63.9	64.1	65.6	63.1	66.2	56.4	48.8	60.7 (60.6–60.8)

*Age-standardised rates (standardised to the Australian 2001 population) with 95% confidence intervals.

- From January 2002 to December 2003 there were 3,382,825 women screened in Australia for pre-cancerous changes to cervical cells. Of these women, 3,318,354 (98%) were in the target age group 20–69 years (Table 2a, page 37).
- The age-standardised participation rate for women aged 20–69 years was 61.0% in 2000–2001 and 60.7% in 2002–2003 (Tables 1b and 2b, pages 36 and 38).

- There was a decline in participation among younger women (20–44 years) and an improvement in participation for older women (45–69 years) in 2002–2003 when compared with 2000–2001; however, these changes were relatively small.
- Participation in 2002–2003 was lower among women aged in their twenties and sixties than in the other age groups in the target population.
- Participation has risen among women aged 45 years and older; however, the level is still relatively low for women in their sixties. It is important for the Program to achieve further increases in screening levels for women in their sixties because they experience some of the highest incidence of cervical cancer in the target population with 11.5 and 12.4 per 100,000 women aged 60–64 and 65–69 respectively (Tables 2b and 24, pages 38 and 65).



Notes

1. Rates are expressed as the percentage of the eligible female population and age-standardised to the Australian 2001 population.
2. Bars on graphs represent 95% confidence intervals.

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

Figure 2: Participation (age-standardised) in the National Cervical Screening Program by women aged 20-69 years, states and territories, 2000-2001 and 2002-2003

24-month period/ rate	NSW	Vic ^(a)	Qld	WA	SA	Tas	ACT ^(a)	NT	Australia
2000-2001									
AS rate	59.1	64.6	57.0	61.4	64.9	65.2	62.8	61.7	61.0
95% CI	59.0-59.3	64.5-64.8	56.8-57.1	61.2-61.6	64.6-65.1	64.7-65.6	62.3-63.4	61.0-62.4	60.9-61.1
2002-2003									
AS rate	58.8	64.2	57.2	60.6	65.1	63.1	62.7	60.2	60.7
95% CI	58.7-58.9	64.1-64.4	57.0-57.3	60.3-60.8	64.8-65.3	62.6-63.5	62.2-63.3	59.5-60.9	60.6-60.8

(a) The Victorian and Australian Capital Territory registries only register women with a Victorian or Australian Capital Territory address respectively.

- There were small but statistically significant decreases in participation between 2000-2001 and 2002-2003 in New South Wales, Victoria, Western Australia, Tasmania and Northern Territory.
- Participation rates varied across the states and territories among women aged 20-69 years in 2002-2003, ranging from 65.1% in South Australia to a low of 57.2% in Queensland.

Early re-screening

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

An early re-screen is defined as having a repeat Pap smear within 21 months of a negative smear result. Reasons for the choice of 21 months as the time line for reporting are discussed under 'Data issues' below.

This indicator:

- tracks over a period of 21 months a cohort of women from all states and territories who had a negative smear result in February 2002 to determine the extent of early re-screening within the National Cervical Screening Program. The exception to this is Queensland where the index month is March. February was selected as the index month nationally because it has been shown to be a relatively stable month in terms of the number of women who are screened. This pattern has been consistent over a number of years, partly because fewer women take holidays at this time. It is also helped by the fact that February is not a month during which public holidays are nationally gazetted.
- measures the compliance with the recommended screening interval following a negative smear.
- is important in assessing screening coverage around the recommended interval, as significant differences may reduce program effectiveness.

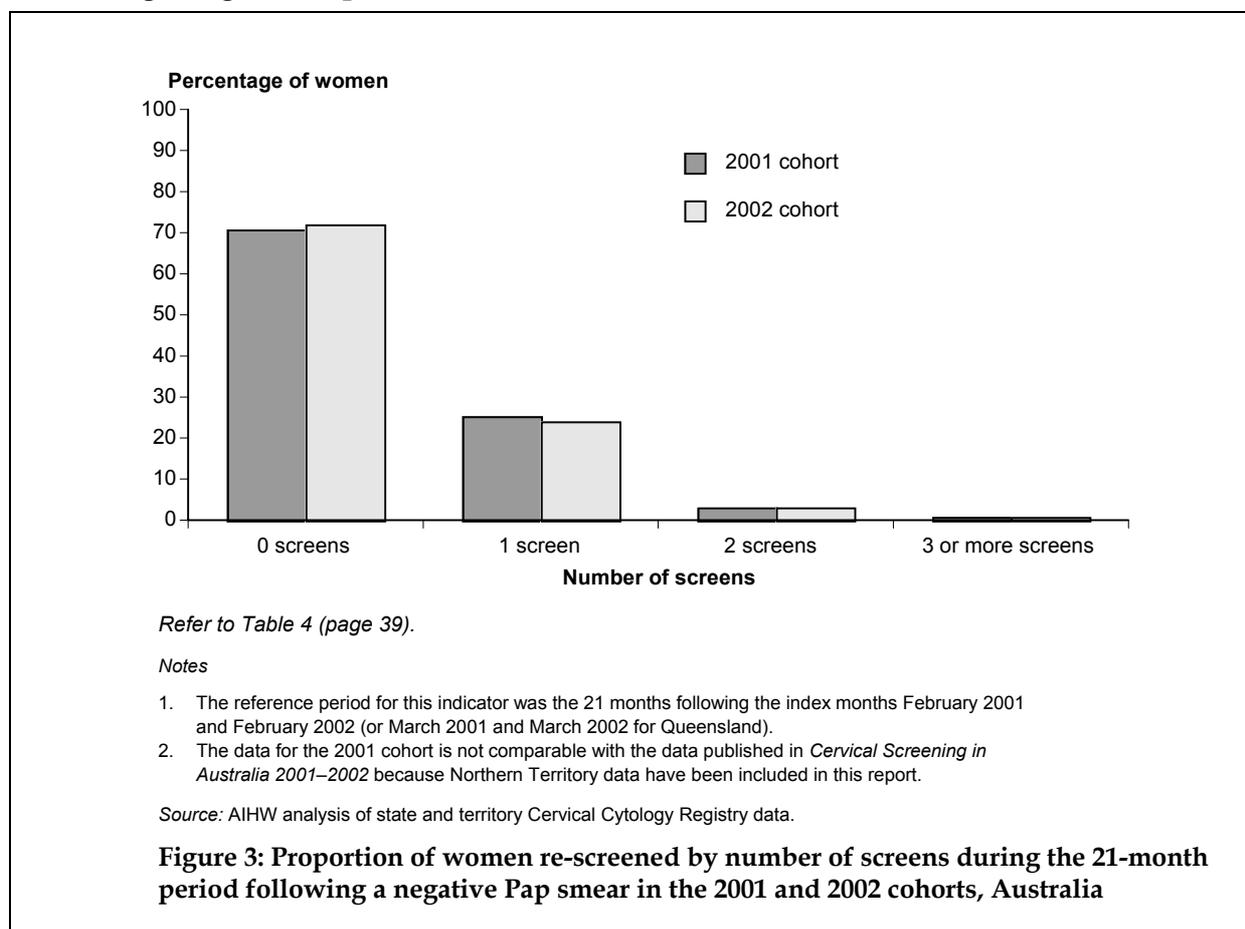
This indicator should be interpreted with caution as some early re-screening after a negative Pap smear report is appropriate and in accordance with the National Health and Medical Research Council guidelines. Specifically, if a woman has a history of histologically proven high-grade abnormality, then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

Data issues

The data for Indicator 2 published in reports before the *Cervical Screening in Australia 1999–2000* report are not directly comparable with the data in this report as this indicator has been modified to change the follow-up period from 24 months to 21 months. This change was made because women often have their Pap smear taken at a time convenient to them, with some choosing to have their biennial screening immediately before the 24-month anniversary. Also prescriptions for oral contraceptives lapse at 22 months and some women are then likely to combine their Pap smears with their visit to the GP for renewing their scripts.

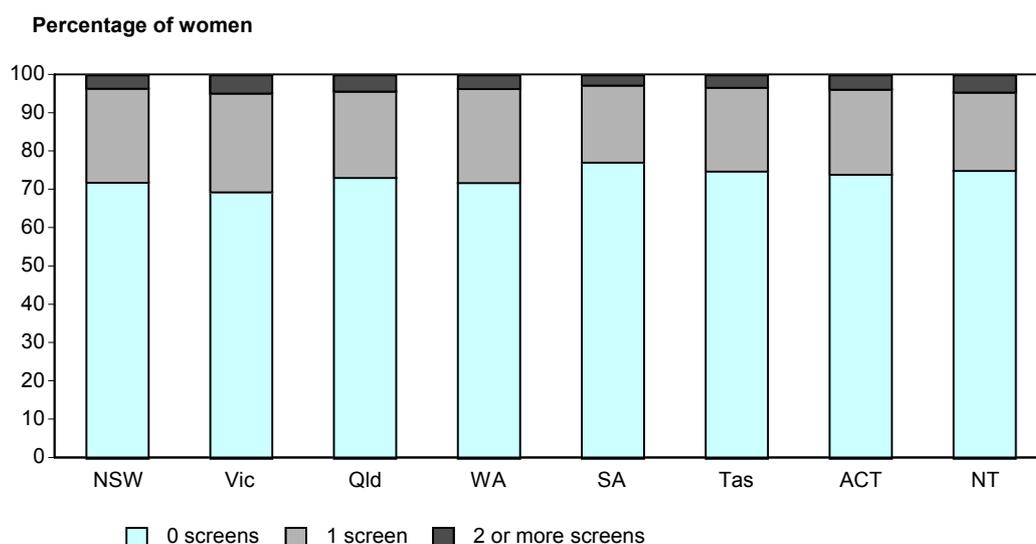
Indicator 2: Early re-screening

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



Cohort	0 screens	1 screen	2 screens	3+ screens
	(Per cent)			
2001	70.8	25.3	3.1	0.8
2002	72.0	24.1	3.1	0.8

- A cohort of 167,421 women screened in February 2002 (except for Queensland where the 21-month period starts in March) whose Pap smear results were normal was tracked over a 21-month period to measure the extent of early re-screening in Australia. A smaller proportion of women in the 2002 cohort were re-screened early than in the previous cohort.
- Of the 2002 cohort, 24.1% were re-screened within 21 months, and a further 3.9% were re-screened two or more times.
- The proportion of women who did not have any additional Pap smears within 21 months following a negative result increased from 70.8% in 2000–2001 to 72.0% in 2002–2003.



Refer to Table 4 (page 39).

Note: The reference period for this indicator was the 21 months following the index month February 2002.

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

Figure 4: Proportion of women re-screened by number of screens during the 21-month period following a negative Pap smear in the 2002 cohort, states and territories

No. of screens	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
	(Per cent)								
0 screens	72.0	69.5	73.3	71.9	77.3	74.9	74.1	75.1	72.0
1 screen	24.6	25.8	22.5	24.6	20.1	21.9	22.2	20.5	24.1
2 or more	3.4	4.7	4.2	3.5	2.6	3.2	3.7	4.4	3.9

- South Australia (77.3%), Northern Territory (75.1) and Tasmania (74.9%) had the highest proportions of women who were not re-screened in the 21 months following their negative Pap smears in 2002.
- Victoria (30.5%), Western Australia (28.1%) and New South Wales (28.0%) had the highest proportions of re-screens and the lowest proportion of re-screens within 21 months occurred in South Australia (22.7%).

Low-grade abnormalities

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

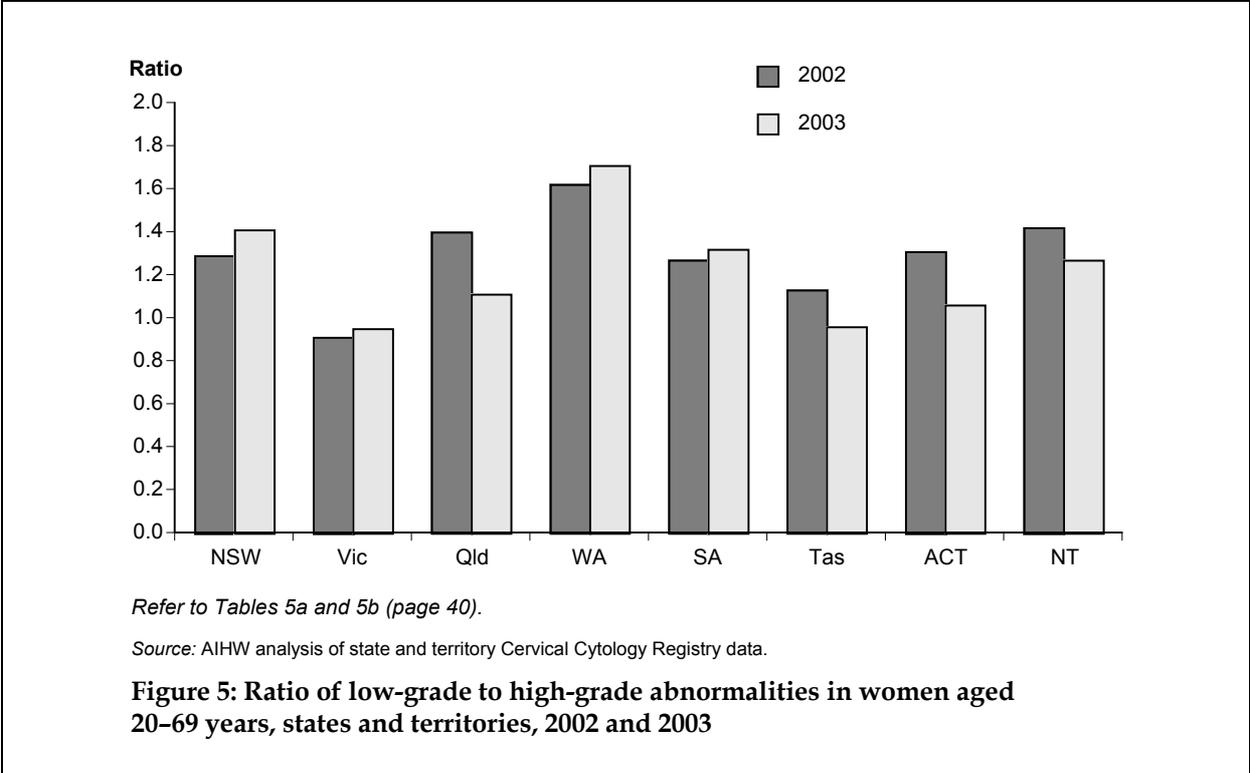
In this report a low-grade intraepithelial abnormality includes:

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

The indicator is the ratio of low-grade to high-grade intraepithelial abnormalities, all histologically verified.

Indicator 3: Low-grade abnormality detection

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



Year	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
	(Ratio)								
2002	1.29	0.91	1.40	1.62	1.27	1.13	1.31	1.42	1.26
2003	1.41	0.95	1.11	1.71	1.32	0.96	1.06	1.31	1.24

- The ratio of histologically confirmed low-grade abnormalities to high-grade abnormalities found in women aged 20-69 years in Australia declined from 1.26 in 2002 to 1.24 in 2003.
- In 2003 there was some variation between states and territories, with the highest ratio in Western Australia (1.71); Victoria (0.95) had the lowest ratio.

High-grade abnormalities

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

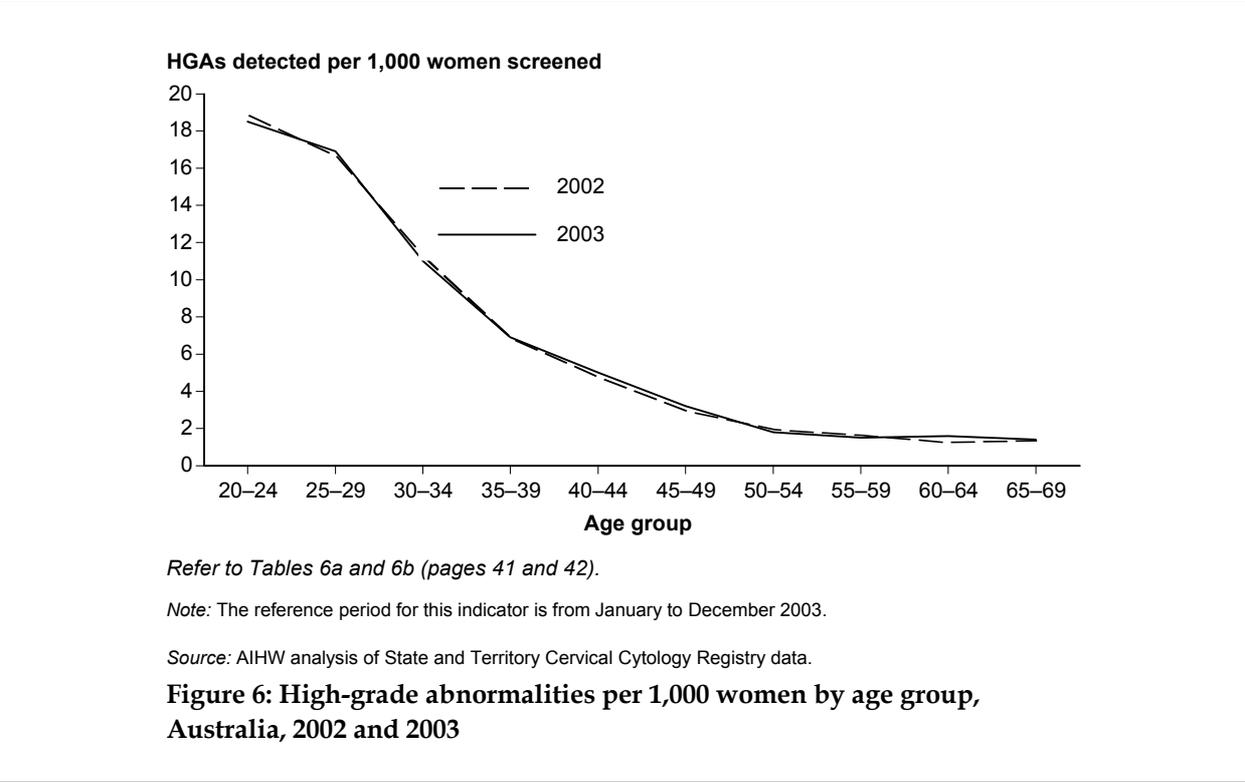
The National Health and Medical Research Council has produced guidelines to assist in the management of women who have low- and high-grade intraepithelial abnormalities (DHS 1994b). These are summarised in Appendix F.

State- and territory-specific issues

- The reference period for Indicator 4 was the 12 months from January to December 2003 for all states and territories.

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).



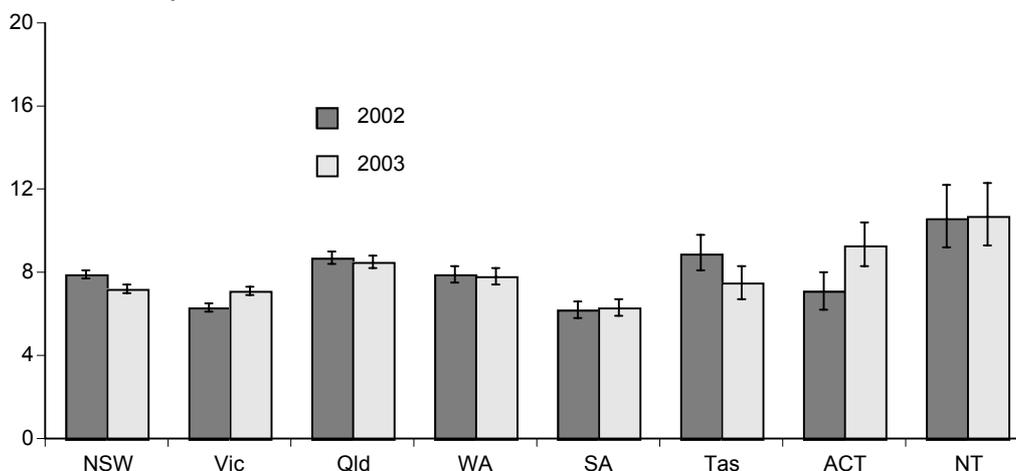
Year	Age group										20-69*
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	
(Number per 1,000 women)											
2002	18.9	16.7	11.3	6.9	4.8	3.0	2.0	1.7	1.3	1.4	7.5 (7.4-7.6)
2003	18.5	16.9	11.0	6.9	5.0	3.2	1.8	1.5	1.6	1.4	7.5 (7.4-7.6)

*Age-standardised rates (standardised to the Australian 2001 population) with 95% confidence intervals.

- In 2003, there were 14,745 histologically verified high-grade abnormalities detected in 1,880,240 women screened in the target age range 20-69 years (0.8%). The same detection rate also applied in 2002 (Table 7b, page 44).
- The age-standardised detection rate for histologically verified high-grade intraepithelial abnormalities was 7.5 per 1,000 women in the target age group, 20-69 years, in 2002 and in 2003.

- The age-specific detection rate of high-grade intraepithelial abnormalities for women aged 20–69 years increased slightly between 2002 and 2003 in the 25–29, 40–49 and 60–64 age groups and declined in all the other age groups except in the 35–39 and 65–69 age groups where there was no change.
- In 2003, the National Cervical Screening Program detected 14,725 women in the target age group 20–69 years with high-grade abnormalities. In 2000, the first year when data for all jurisdictions were included, the age-standardised rate was 6.9 (standardised to the 2001 Australian population) per 1,000 women screened; this increased to 7.5 in 2003.
- The rate of high-grade abnormalities detected was much higher in the younger age groups. In the 20–24 age group the rate was 18.5 per 1,000 women screened compared with less than 2 per 1,000 women aged 50–54 years and older. This age-specific distribution is the inverse of the pattern for cervical cancer mortality.

HGAs detected per 1,000 women screened



Refer to Tables 9a and 9b (pages 47 and 47).

Notes

1. The reference period for this indicator is from January to December 2003.
2. Rates are standardised to the 2001 Australian total population.
3. Bars on graphs represent 95% confidence intervals.

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

Figure 7: Age-standardised rate of high-grade abnormalities per 1,000 women screened aged 20–69 years, states and territories, 2002 and 2003

AS rate	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
2002	7.9	6.3	8.7	7.9	6.2	8.9	7.1	10.6	7.5
95% CI	7.7–8.1	6.1–6.5	8.4–9.0	7.5–8.3	5.8–6.6	8.1–9.8	6.3–8.1	9.1–12.1	7.4–7.6
2003	7.2	7.1	8.5	7.8	6.4	7.5	9.3	10.7	7.5
95% CI	7.0–7.4	6.8–7.3	8.2–8.8	7.4–8.2	6.0–6.8	6.7–8.3	8.3–10.5	9.3–12.3	7.4–7.6

- In 2003, Northern Territory had the highest rate of 10.7 high-grade abnormalities detected per 1,000 women screened and South Australia had the lowest with 6.3 for women in the target age group, 20–69 years.
- Detection of high-grade abnormalities increased between 2002 and 2003 in Victoria, South Australia, Australian Capital Territory and Northern Territory, but only the increases in Victoria and Australian Capital Territory were statistically significant.

Incidence

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

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

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

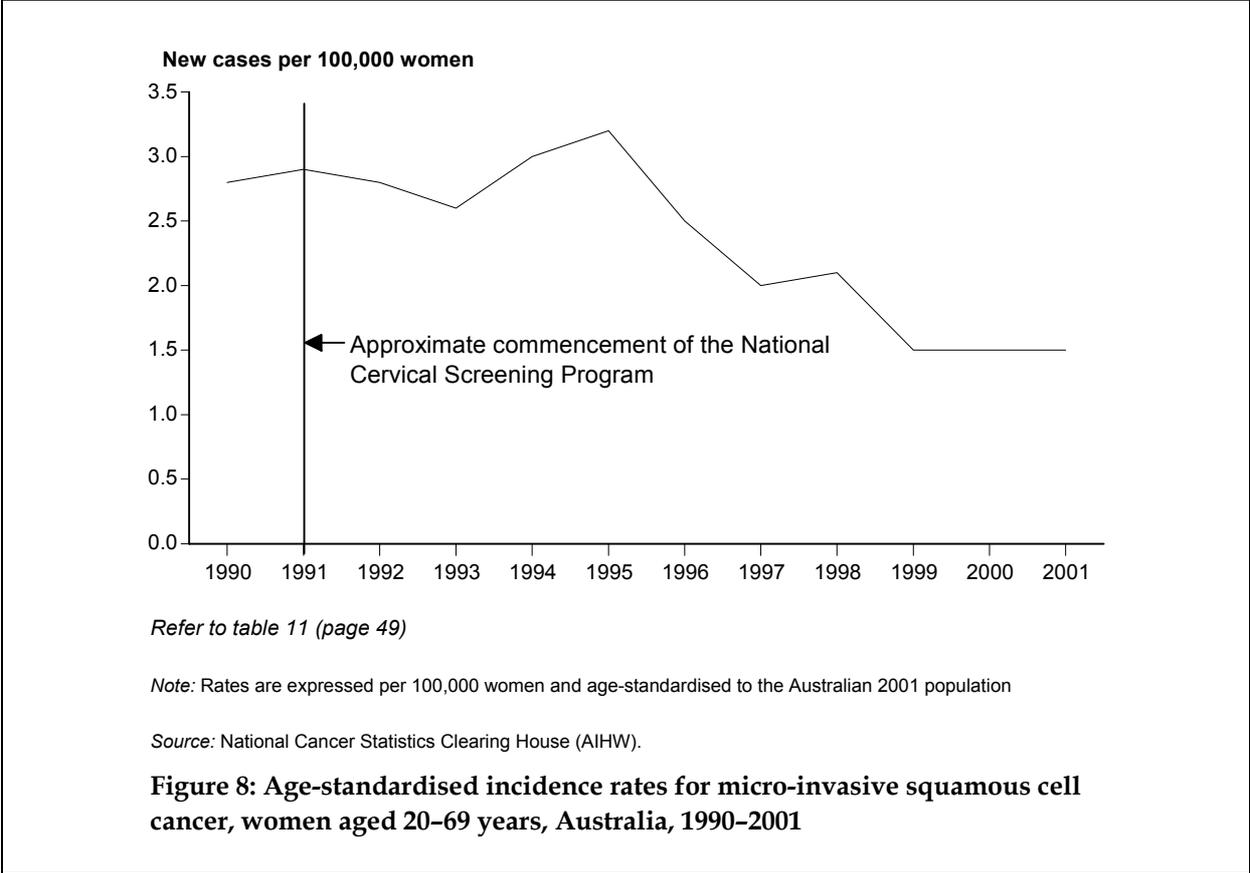
Stage 1a2. Measured invasion of stroma between 3 mm and 5 mm in depth and no wider than 7 mm. The depth of invasion should be measured from the base of the epithelium, either surface or glandular, from which it originates. Vascular space involvement, either venous or lymphatic, should not alter the staging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

In interpreting cervical cancer incidence statistics, note that cervical screening has been available on an ad hoc basis since the 1960s, but it is only since the late 1980s and early 1990s that there has been an organised national approach to screening at a population level. The introduction of cervical screening programs which achieve higher participation rates 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, but the rate of more advanced cancers decreases in the longer term.

For this report the most recent national data available on incidence are for 2001, in contrast to screening data and mortality data which are available for 2003. This time lag in availability of incidence data is expected to reduce over the next 2 years.

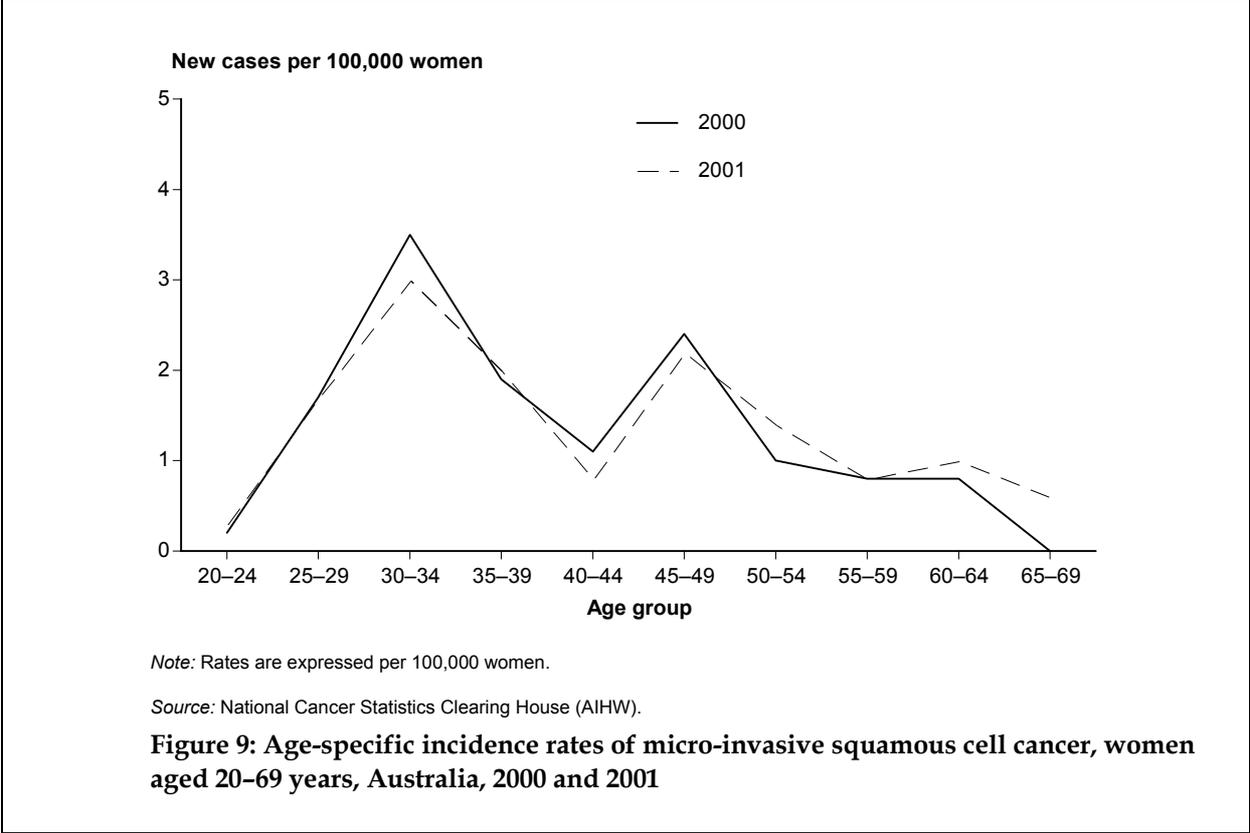
Indicator 5.1: Incidence of micro-invasive cervical cancer

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



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
	(Number per 100,000 women)											
AS rate (20-69 years)	2.8	2.9	2.8	2.6	3.0	3.2	2.5	2.0	2.1	1.5	1.5	1.5

- The age-standardised incidence rate of micro-invasive cervical cancer was 1.5 per 100,000 women in 2001 for women in the target age group of 20-69 years and 1.0 per 100,000 for women of all ages (0-85+ years) (Table 11, page 49). The 20-69 age group rates fell sharply between 1995 and 1999 and then stabilised between 1999 and 2001 at 1.5 per 100,000 women.
- In 2001 there were 98 new cases of micro-invasive cervical cancers for women of all ages (0-85+ years) and 91 new cases in women aged 20-69 years (Table 10, page 48).



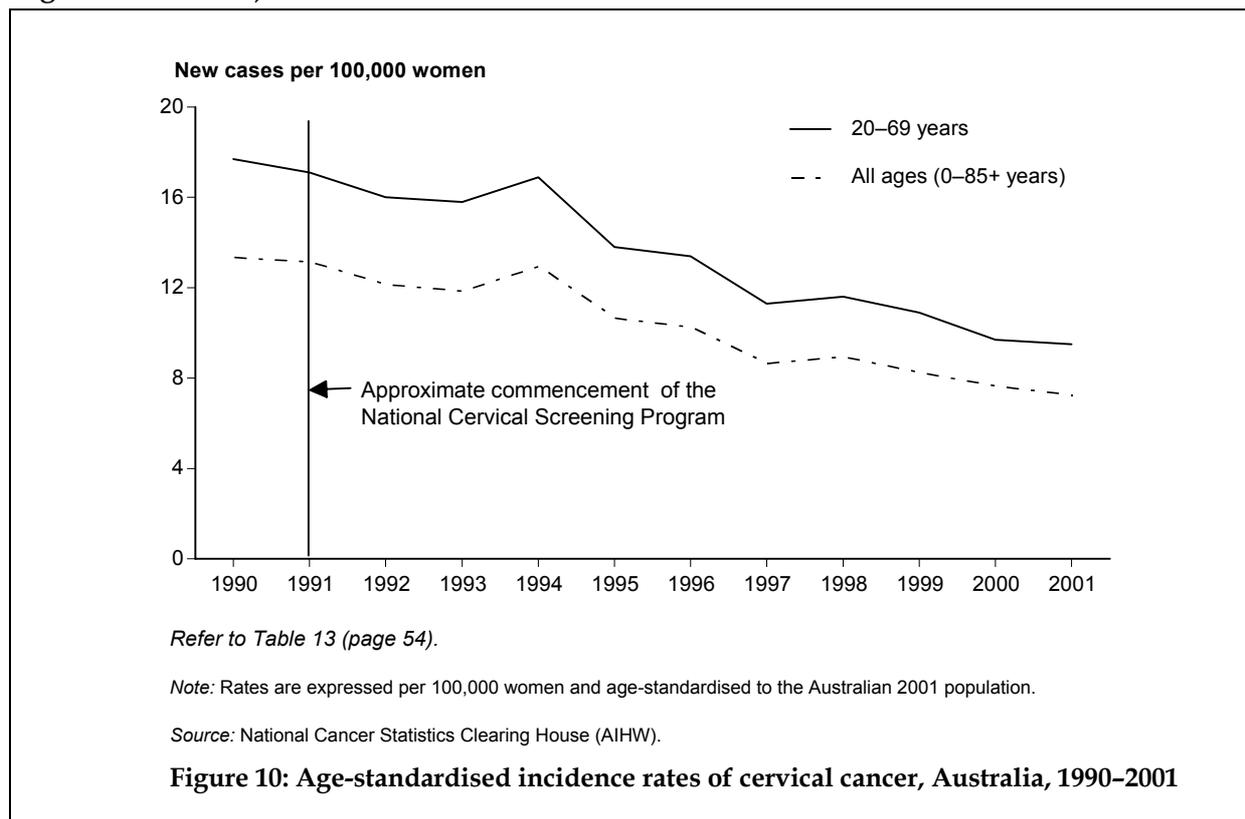
Year	Age group										20–69*
	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	
2000	0.2	1.7	3.5	1.9	1.1	2.4	1.0	0.8	0.8	0.0	1.5 (1.2–1.8)
2001	0.3	1.7	3.0	2.0	0.8	2.2	1.4	0.8	1.0	0.6	1.5 (1.2–1.8)

*Age-standardised rates (standardised to the Australian 2001 population) with 95% confidence intervals.

- In both 2000 and 2001, the highest detection rates for micro-invasive squamous cell cancer were for women in the 30–34 age group. The rate declined with age in both years to rates of 1.4 per 100,000 and below for women aged 50 years or more; however, there was some fluctuation in the age-specific incidence rates for women aged 35–45 years,
- In 2001 there were 22 cases of micro-invasive squamous cell cancer in women aged 30–34 years. The number of cancers declined to less than 10 for women aged 50–69 years.

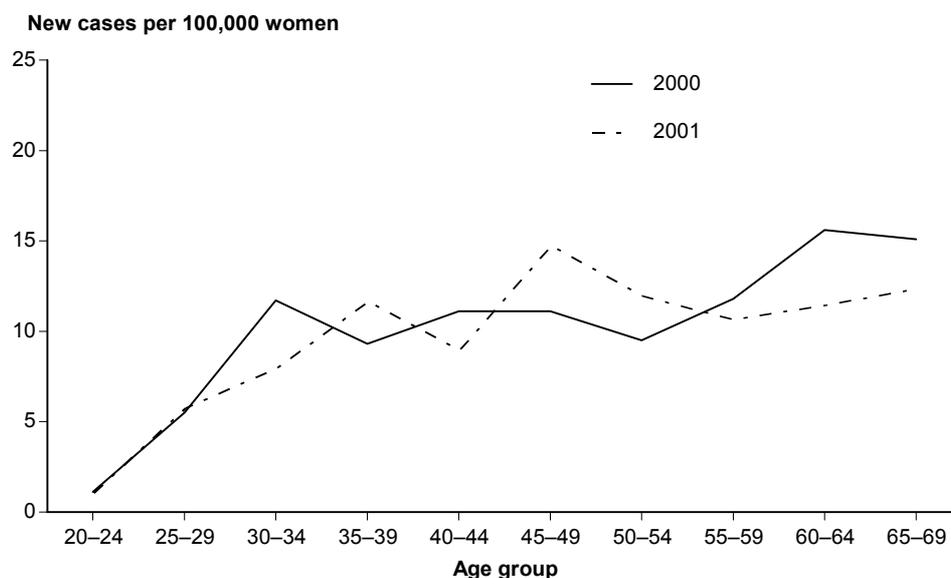
Indicator 5.2: Incidence of squamous, adenocarcinoma, adenosquamous and other cervical cancer

Incidence rates of squamous, adenocarcinoma, adenosquamous and other cervical cancer (micro-invasive and invasive) 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).



Age	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
(Number per 100,000 women)												
All ages 0–85+ years	13.4	13.2	12.2	11.9	13.0	10.7	10.3	8.7	9.0	8.3	7.7	7.3
Target age 20–69 years	17.7	17.1	16.0	15.8	16.9	13.8	13.4	11.3	11.6	10.9	9.7	9.5

- In 2001, there were 735 new cases of cervical cancer diagnosed in Australia compared with the peak of 1,136 new cases in 1994. Of the 735 new cases, 584 were women in the target age group 20–69 years (Table 12, page 50). All but two cases of the remaining 151 were in women aged 70 years and over.
- The age-standardised incidence rate of all cervical cancers declined to 7.3 per 100,000 women for women of all ages (0–85+ years) in Australia in 2001, and to 9.5 per 100,000 women in the target group. Between 1990 and 2001 the decline over all ages was 45.1%, and in the target age group was 46.7% (Table 13, page 51).



Refer to Table 13 (page 51).

Note: Rates are expressed per 100,000 women.

Source: National Cancer Statistics Clearing House (AIHW).

Figure 11: Age-specific incidence rates of cervical cancer, Australia, 2000 and 2001

Year	Age group										
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	20-69
(Number per 100,000 women)											
2000	1.1	5.5	11.7	9.3	11.1	11.1	9.5	11.8	15.6	15.1	9.7
2001	1.1	5.8	8.0	11.7	9.0	14.8	12.0	10.7	11.5	12.4	9.5

- The age-specific rate of cervical cancer incidence was highest in 2001 for women aged 45-49 with 14.8 per 100,000 women. Although age-specific rates for women in their sixties and seventies have declined since 2000, they remain high.
- The 2001 age-specific rate of cervical cancer incidence increased for women in the 35-39, 45-49 and 50-54 age groups.
- Figure 11 shows two distinct peaks in age-specific cervical cancer in 2001, the 30-34 and 45-49 age groups; however, the underlying trend is rising incidence with increasing age.



Refer to Tables 14b and 15b (pages 53 and 55).

Notes

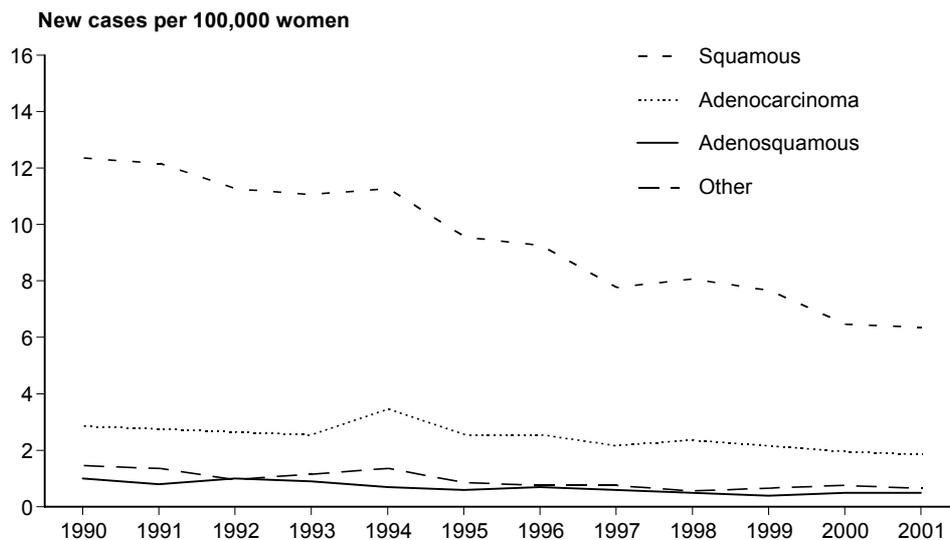
1. Rates are expressed per 100,000 women and age-standardised to the Australian 2001 population.
2. Bars on graphs represent 95% confidence intervals.

Source: National Cancer Statistics Clearing House (AIHW).

Figure 12: Age-standardised cervical cancer incidence rates in women aged 20-69 years, states and territories, 1994-1997 and 1998-2001

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
1994-1997	13.8	13.8	15.3	13.9	9.9	14.5	12.4	26.2	13.8
95% CI	13.0-14.6	12.9-14.8	14.1-16.6	12.4-15.6	8.6-11.5	11.6-17.9	9.0-16.6	18.1-36.3	13.3-14.3
1998-2001	10.7	8.6	12.3	11.0	9.2	12.3	7.8	16.3	10.4
95% CI	10.0-11.5	7.9-9.3	11.3-13.4	9.7-12.4	7.9-10.7	9.7-15.5	5.3-11.0	10.7-23.5	10.0-10.8

- In the period 1998-2001, the Australian Capital Territory had the lowest incidence at 7.8 new cases per 100,000 women and the Northern Territory had the highest rate of 16.3 per 100,000 women.
- The age-standardised incidence rate declined in all states and territories between the two periods 1994-1997 and 1998-2001. The declines were significant in New South Wales, Victoria and Queensland; the national average was also significantly lower than in the earlier period.



Refer to Table 16b (page 56).

Note: Rates are expressed per 100,000 women and age-standardised to the Australian 2001 population.

Source: National Cancer Statistics Clearing House (AIHW).

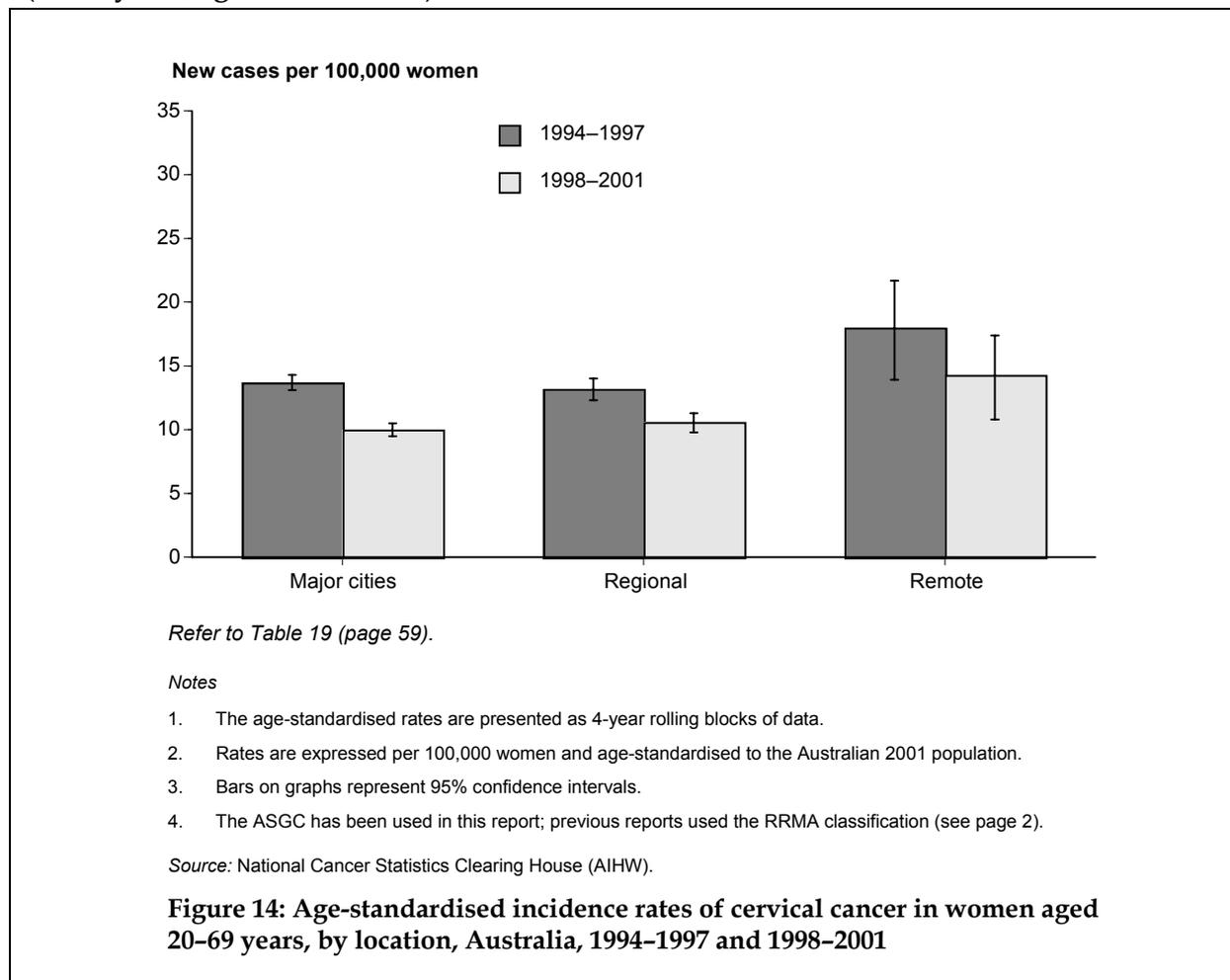
Figure 13: Age-standardised incidence rates of cervical cancer by histological type, women aged 20–69 years, Australia, 1990–2001

Histological type	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Squamous	12.4	12.2	11.3	11.1	11.3	9.6	9.3	7.8	8.1	7.7	6.5	6.4
Adenocarcinoma	2.9	2.8	2.7	2.6	3.5	2.6	2.6	2.2	2.4	2.2	2.0	1.9
Adenosquamous	1.0	0.8	1.0	0.9	0.7	0.6	0.7	0.6	0.5	0.4	0.5	0.5
Other	1.5	1.4	1.0	1.2	1.4	0.9	0.8	0.8	0.6	0.7	0.8	0.7

- In 2001, squamous cell carcinomas of the cervix accounted for 67.3% of all new cases of cervical cancer in women aged 20–69 years, adenocarcinomas 19.9%, adenosquamous 5.1%, and the remaining 7.9% a range of other mixed and unknown histologies (Table 16a, page 56).
- The trend from 1990 to 2001 for all histological types has been a decrease in the age-standardised rates of cervical cancer per 100,000 women aged 20–69 years; the difference in the rates between 1990 and 2001 is statistically significant for all types except adenosquamous.
- The incidence rates for all histological types of cervical cancer have almost halved since 1990, before the start of the national screening program.

Indicator 5.3: Incidence by location

Incidence rates of cervical cancer per 100,000 estimated resident female population in a 3-year period by location by 5-year age groups (20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84, 85+) and for the target age group (20–69 years, age-standardised).



	Metropolitan		Regional		Remote	
	1994–1997	1998–2001	1994–1997	1998–2001	1994–1997	1998–2001
AS rate	13.7	10.0	13.2	10.6	18.0	14.3
95% CI	13.1–14.3	9.5–10.5	12.4–14.1	9.9–11.4	14.4–22.1	11.3–17.9

- There were 2,046 new cases (66.1% of all new cases) of cervical cancer in major cities in the 4-year period 1998–2001, 965 new cases (31.2% of all new cases) in regional locations and 85 new cases (2.7% of all new cases) in remote locations (Table 18, page 58).
- Age-standardised cervical cancer incidence rates in the period 1998–2001, for women in the target age group 20–69 years, were higher in remote locations (14.3 per 100,000 women) than in regional locations (10.6) and major cities (10.0). The difference in cervical cancer rates for women in the target age groups in remote locations was significantly higher than for women in major cities (Table 19, page 59).

Mortality

Cancer of the cervix is one of the few cancers for which there is an efficacious screening test for detection of precursors of the disease. Most deaths due to cervical cancer are potentially avoidable (Marcus & Crane 1998). The objective of the National Cervical Screening Program is to reduce this mortality rate.

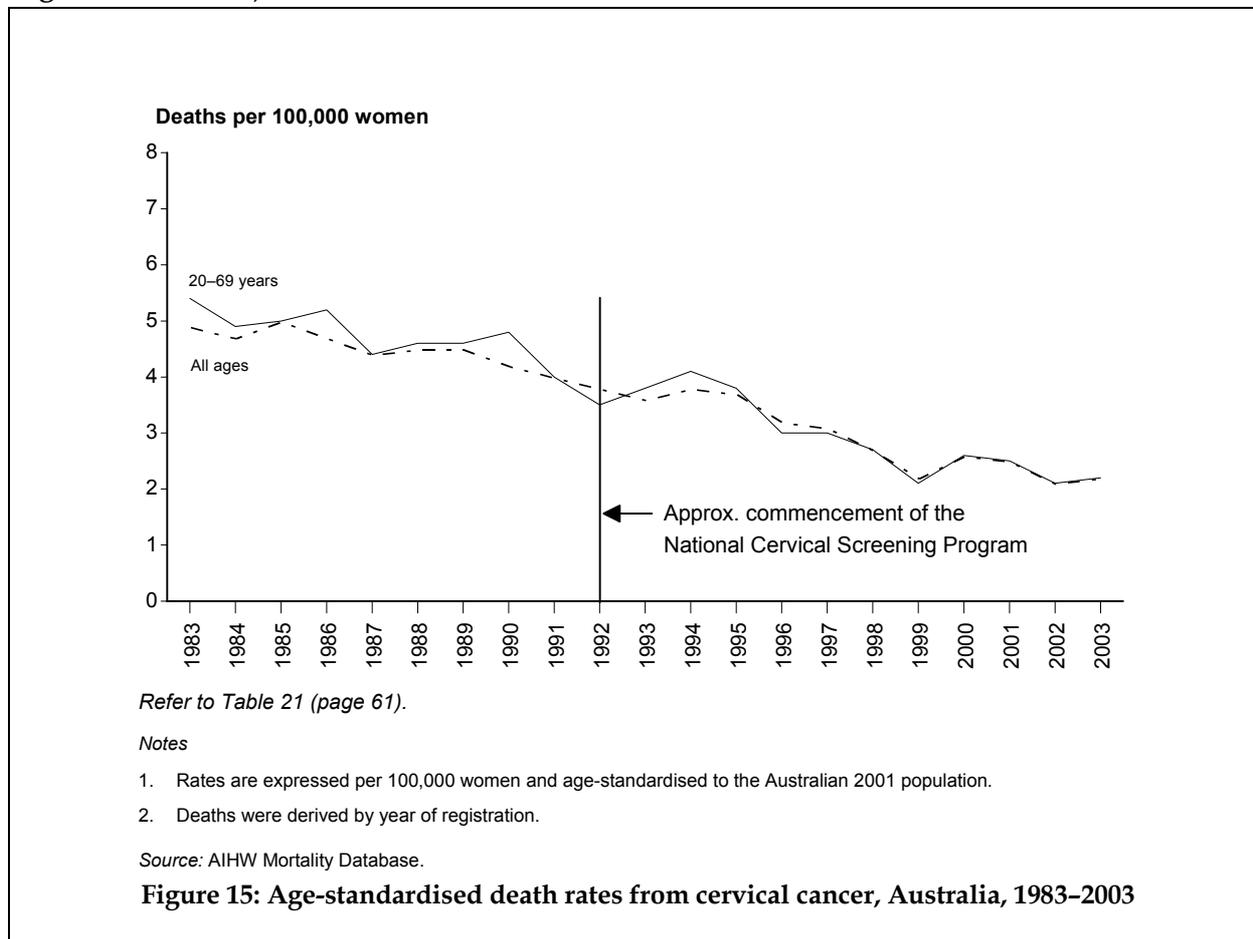
The three mortality indicators are mortality (by age and state), mortality by location (metropolitan, rural and remote), and Indigenous mortality (Indigenous and other Australian women). These indicators measure the level of mortality from cervical cancer in the total female population by age and other demographic characteristics. The mortality indicators are important because from them an assessment can be made of changes in mortality in different age groups and particular target groups over time. However, note that changes in the mortality rates may not be evident for a number of years following an improvement in the participation rate. Therefore, the effectiveness of this measure needs to be viewed in the longer rather than the shorter term.

Data issues

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

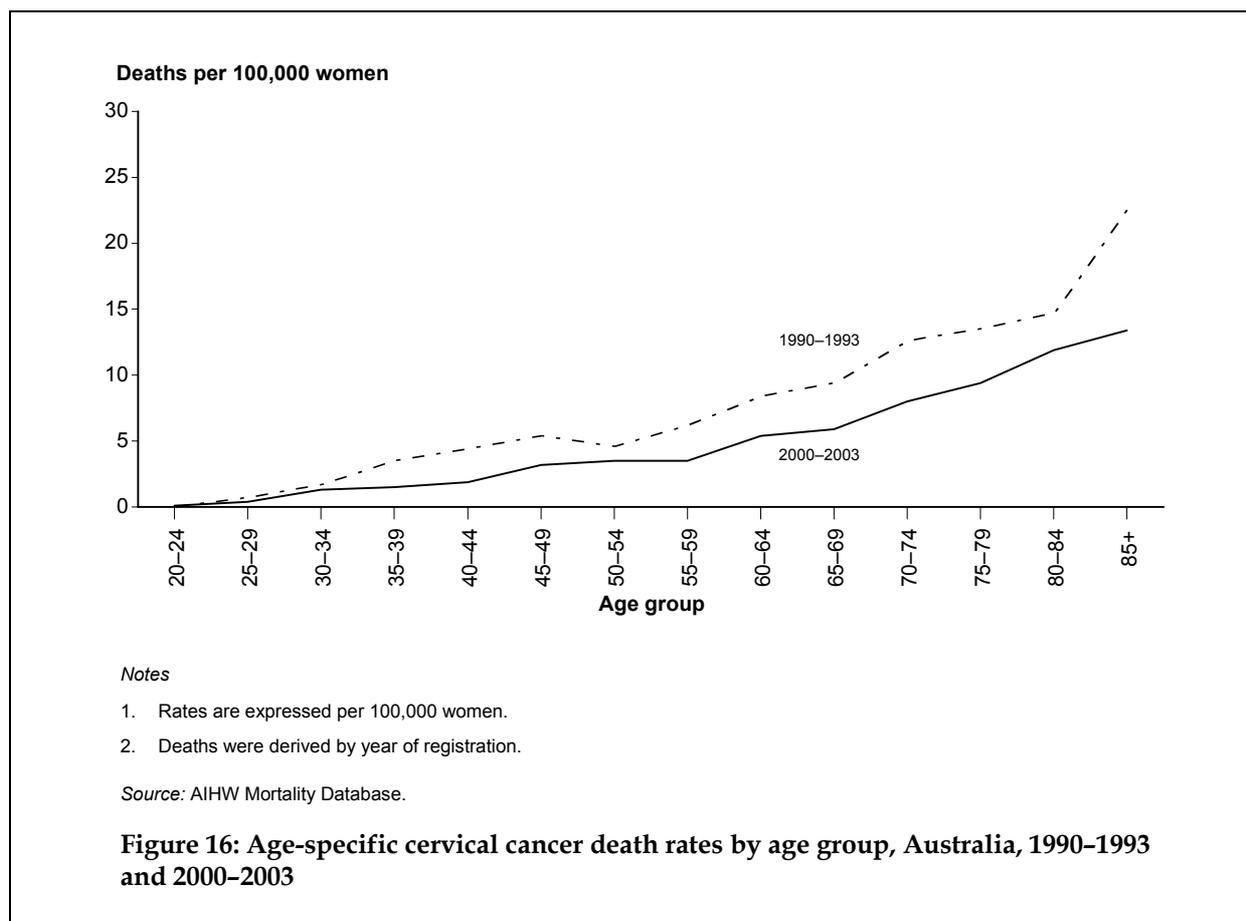
Indicator 6.1: Mortality

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).



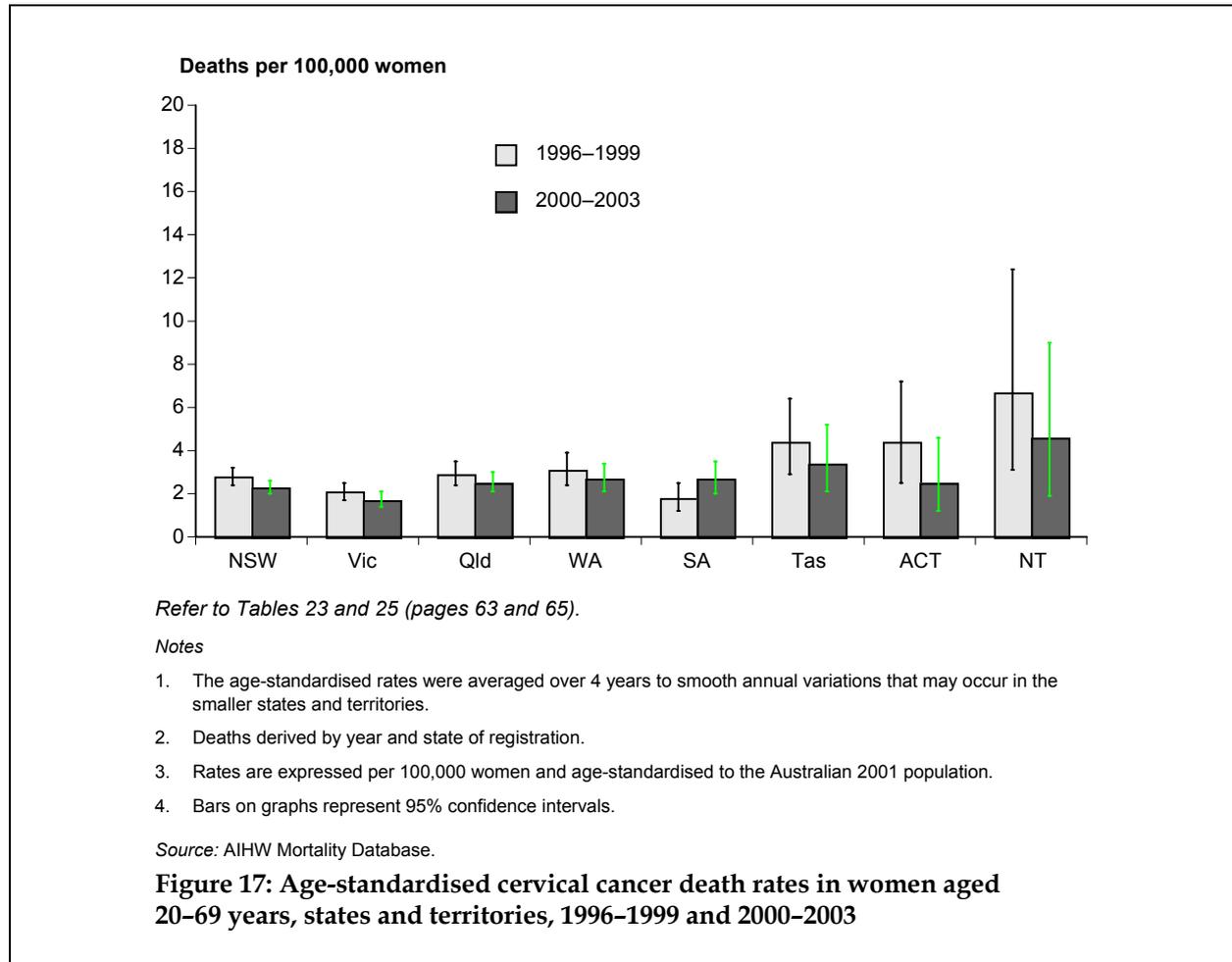
	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03
All ages																					
0–85+ years	4.9	4.7	5.0	4.7	4.4	4.5	4.5	4.2	4.0	3.8	3.6	3.8	3.7	3.2	3.1	2.7	2.2	2.6	2.5	2.1	2.2
Target age																					
20–69 years	5.4	4.9	5.0	5.2	4.4	4.6	4.6	4.8	4.0	3.5	3.8	4.1	3.8	3.0	3.0	2.7	2.1	2.6	2.5	2.1	2.2

- Cervical cancer was the 18th most common cause of cancer deaths in Australian women in 2003, accounting for 238 deaths.
- The age-standardised death rate for women of all ages (0–85+ years) was 2.2 per 100,000 women in 2003, much lower than the peak of 5.0 per 100,000 women in 1985, which was before the introduction of the organised screening program (this represents a 56% decrease in mortality over this period).



Period	Age group													
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
1990-1993	0.1	0.8	1.8	3.6	4.5	5.5	4.7	6.3	8.5	9.5	12.7	13.6	14.8	22.7
2000-2003	0.1	0.4	1.3	1.5	1.9	3.2	3.5	3.5	5.4	5.9	8.0	9.4	11.9	13.4

- Mortality from cervical cancer between the 1990-1993 and 2000-2003 periods declined in all age groups except for the age group 20-24 years, where there was no difference. The decline in mortality rates, particularly for the oldest age groups in 2000-2003, is evident in Figure 16 when compared with the earlier period.
- In both 1990-1993 and 2000-2003 the age-specific rates of cervical cancer mortality climbed with increasing age.

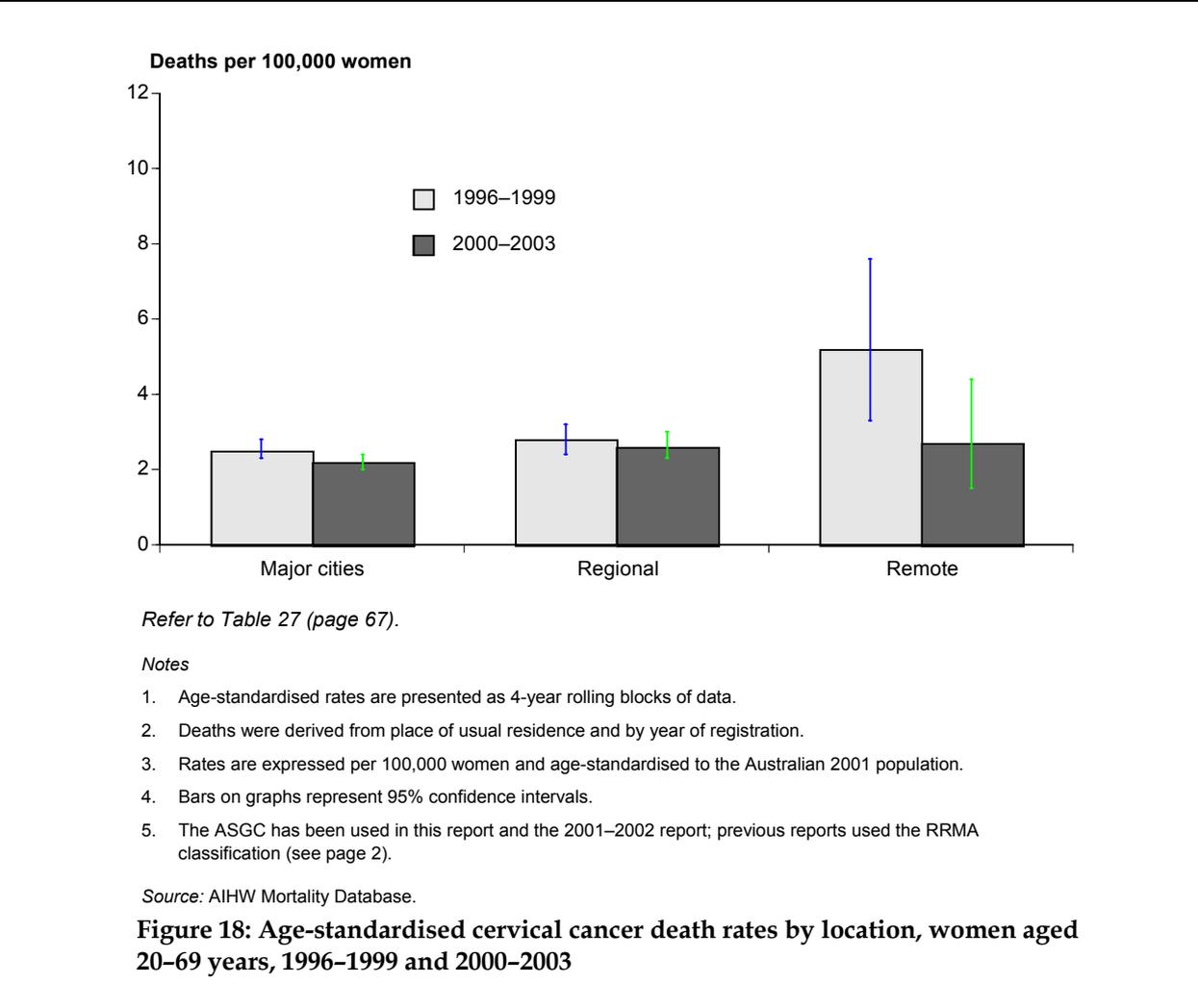


	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Rate 1996-1999	2.8	2.1	2.9	3.1	1.8	4.4	4.4	6.7	2.7
95% CI	2.5-3.2	1.8-2.5	2.4-3.4	2.4-3.9	1.3-2.5	2.9-6.4	2.5-7.2	3.0-12.4	2.5-2.9
Rate 2000-2003	2.3	1.7	2.5	2.7	2.7	3.4	2.5	4.6	2.3
95% CI	2.0-2.7	1.4-2.1	2.1-3.0	2.1-3.5	2.1-3.6	2.1-5.2	1.2-4.6	1.9-9.0	2.1-2.5

- In the 4-year period 2000-2003 there were 994 deaths from cervical cancer in all states and territories compared with 1,081 in 1996-1999.
- Age-standardised mortality varied from 1.7 deaths per 100,000 women in Victoria to 4.6 per 100,000 women in the Northern Territory in the 2000-2003 period.
- The age-standardised death rates decreased in all jurisdictions between the two periods except in South Australia. Although the Northern Territory rate decreased sharply between the two periods, the rates are based on very small numbers and are subject to considerable variation.

Indicator 6.2: Mortality by location

Death rate from cervical cancer per 100,000 estimated resident female population in a 4-year period by location and 5-year age groups (20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84, 85+) and for the target age group (20–69 years, age-standardised).



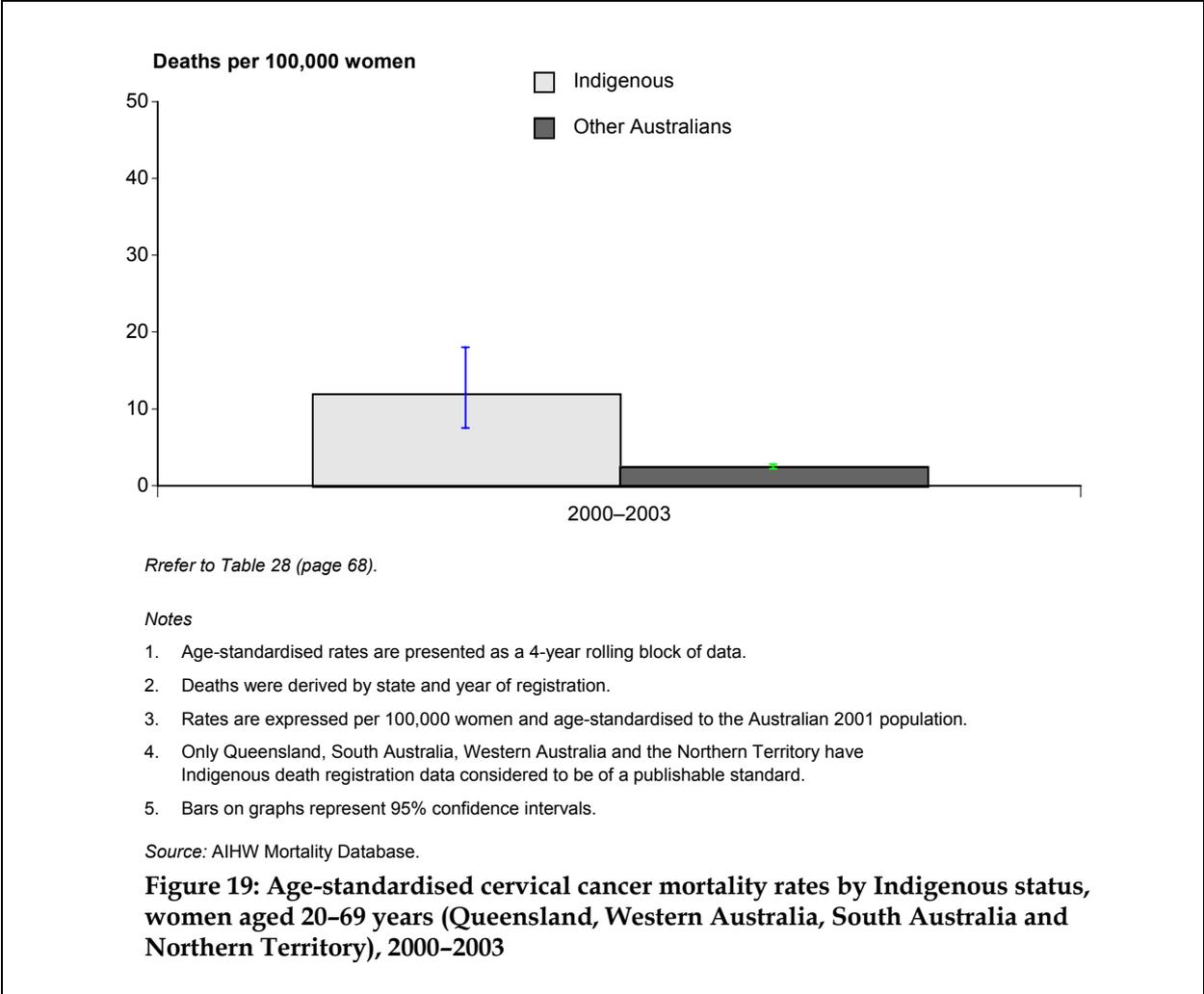
	Major cities		Regional		Remote	
	1996–1999	2000–2003	1996–1999	2000–2003	1996–1999	2000–2003
Rate	2.5	2.2	2.8	2.6	5.2	2.7
95% CI	2.3–2.8	1.9–2.4	2.5–3.2	2.2–3.0	3.2–7.6	1.5–4.4

- During the 4-year period 2000–2003, there were 622 deaths (63% of all cervical cancer deaths in that period) in major cities, 340 deaths (34% of all cervical cancer deaths) in regional areas and 26 deaths (3% of all cervical cancer deaths) in remote areas (Table 26, page 66).

- In all three regions the age-standardised mortality rates declined between the periods 1996–1999 and 2000–2003; however, the declines were not statistically significant. The largest overall mortality reduction, of 33%, was in remote areas, but these rates are based on small numbers and should be treated with caution.

Indicator 6.3: Indigenous mortality

Death rate from cervical cancer per 100,000 estimated resident female population in a 4-year period by Indigenous status and 5-year age groups (20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75+) and for the target age group (20-69 years, age-standardised).



	Indigenous	Other Australians
AS rate (A)	12.0	2.5
95% CI	7.5-18.0	2.1-2.8

- Owing to the difficulties of Indigenous identification in health data collections, only Indigenous mortality data from Queensland, Western Australia, South Australia and the Northern Territory are considered to be of publishable standard. Therefore, all cervical cancer mortality data for both Indigenous women and other Australian women used in this analysis are confined to these jurisdictions.

- The age-standardised mortality rate attributable to cervical cancer among Indigenous women in the target age group in the 2000–2003 period was 12.0 per 100,000 women and was considerably higher than the mortality rate for other Australian women in the same age range (2.5 per 100,000 women) (Table 28, page 68).

Tables

Indicator 1: Participation

Table 1a: Number of women participating in the National Cervical Screening Program by age, states and territories, 2000–2001

Age group	NSW	Vic ^(a)	Qld	WA	SA	Tas	ACT ^(a)	NT	Australia
20–24	98,410	81,673	62,480	33,698	25,410	8,804	6,193	4,595	321,263
25–29	143,840	114,693	79,515	43,183	32,306	10,127	7,845	5,898	437,407
30–34	153,836	125,139	81,104	46,448	36,257	10,994	8,158	5,827	467,763
35–39	154,920	121,537	80,964	47,090	37,436	11,924	7,976	5,043	466,890
40–44	140,924	112,399	74,268	43,390	35,941	11,193	7,474	4,188	429,777
45–49	118,907	95,793	62,383	36,619	30,829	9,475	6,708	3,464	364,178
50–54	99,838	82,150	52,047	29,221	26,386	8,081	6,059	2,509	306,291
55–59	68,905	56,506	35,118	18,729	18,311	5,505	3,665	1,375	208,114
60–64	50,567	42,868	24,336	14,060	14,155	4,106	2,378	766	153,236
65–69	35,430	31,124	16,749	9,621	10,236	2,974	1,519	359	108,012
70–74	14,641	10,486	8,042	3,641	6,495	798	483	149	44,735
75–79	5,341	3,617	3,098	1,173	0	327	168	53	13,777
80+	2,190	1,584	1,354	542	0	133	46	26	5,875
Not stated	3,720	0	320	0	20	3	9	18	4,090
All ages									
20–80+ years	1,091,469	879,569	581,778	327,415	273,782	84,444	58,681	34,270	3,331,408
Target age									
20–69 years	1,065,577	863,882	568,964	322,059	267,267	83,183	57,975	34,024	3,262,931

(a) The Victorian and Australian Capital Territory registers only register women with a Victorian or Australian Capital Territory address respectively.

Note: These numbers may be overestimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas; however, the likely impact of double counting is probably very small.

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

Table 1b: Proportion of women participating in the National Cervical Screening Program by age, states and territories, 2000–2001

Age group	NSW	Vic ^(a)	Qld	WA ^(a)	SA	Tas	ACT ^(a)	NT	Australia
(Per cent)									
20–24	46.4	51.1	51.0	53.0	54.8	62.7	47.8	59.9	50.3
25–29	58.8	63.3	59.3	62.7	64.2	66.9	59.5	64.2	61.0
30–34	63.7	67.2	61.2	65.9	68.6	68.5	64.9	65.9	64.9
35–39	63.7	67.6	60.5	66.1	68.3	69.8	64.9	64.1	64.8
40–44	62.9	68.0	59.9	64.8	68.5	67.5	64.6	63.1	64.4
45–49	63.7	69.3	60.0	64.3	68.9	67.6	66.0	64.9	65.0
50–54	61.7	68.1	57.1	61.7	65.8	65.8	68.5	61.9	63.0
55–59	63.2	71.2	58.3	62.7	69.0	66.1	72.1	62.3	64.9
60–64	52.9	61.1	48.8	54.9	60.7	55.2	63.2	55.5	55.3
65–69	43.7	52.3	41.9	46.5	51.2	48.1	54.4	42.6	46.7
70–74	18.1	17.7	20.8	18.9	31.3	13.4	19.0	24.7	19.7
75–79	7.6	7.1	9.4	7.3	0.0	6.2	7.6	13.6	7.0
80+	2.4	2.4	3.1	2.5	0.0	1.9	1.8	5.5	2.3
All ages 20–80+ years									
Crude rate	53.5	58.0	52.6	56.6	57.5	58.1	58.4	61.8	55.3
AS rate	53.0	57.7	51.3	55.0	58.2	58.0	56.2	55.9	54.7
95% CI	52.9–53.1	57.6–57.9	51.2–51.4	54.8–55.1	58.0–58.4	57.6–58.3	55.8–56.7	55.2–56.6	54.6–54.7
Target age 20–69 years									
Crude rate	59.2	64.5	57.4	61.7	64.9	65.4	62.2	63.0	61.1
AS rate	59.1	64.6	57.0	61.4	64.9	65.2	62.8	61.7	61.0
95% CI	59.0–59.3	64.5–64.8	56.8–57.1	61.2–61.6	64.6–65.1	64.7–65.6	62.3–63.4	61.0–62.4	60.9–61.1

(a) The Victorian and Australian Capital Territory registers only register women with a Victorian or Australian Capital Territory address respectively.

Notes

1. These numbers may be overestimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas; however, the likely impact of double counting is probably very small.
2. Rates are standardised to the 2001 Australian total population.
3. In 2001 the ABS carried out a full population Census and a national health survey. These led to the revision of the ABS estimated resident population (ERP) data, the introduction of a new Australian standard population for use in age standardisation and the production of new estimates of hysterectomy status among Australian women. The denominators for participation rates presented in this report have been calculated using the 2001 ABS National Health Survey hysterectomy fractions and the revised ERP values, and age-adjusted using the 2001 Australian standard population. The denominators for the equivalent rates in previous reports were calculated using the 1995 ABS National Health Survey hysterectomy fractions and unrevised ERP values, and age-adjusted using the 1991 Australian standard population. The combined effect of these changes is that participation rates presented in this report are on average between 1 and 2 percentage points lower than equivalent rates in previous reports.
4. Separate rates cannot be calculated for women in the 80–84 and 85 and over age groups because hysterectomy fractions are not available for these age groups; however a hysterectomy fraction is available for women aged 80 and over.

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

Table 2a: Number of women participating in the National Cervical Screening Program by age, states and territories, 2002–2003

Age group	NSW	Vic ^(a)	Qld	WA	SA	Tas	ACT ^(a)	NT	Australia
20–24	98,494	82,857	63,774	34,023	25,125	8,418	6,663	4,372	323,726
25–29	132,156	105,856	74,072	39,544	29,565	8,765	7,504	5,184	402,646
30–34	157,756	127,641	84,658	46,613	35,871	10,685	8,514	5,545	477,283
35–39	147,609	119,391	79,945	45,241	35,799	10,576	7,700	4,747	451,008
40–44	145,889	115,049	79,388	44,564	36,382	11,135	7,630	4,141	444,178
45–49	123,071	99,382	66,638	38,070	31,814	9,411	6,735	3,445	378,566
50–54	101,816	83,901	55,659	30,731	27,181	7,925	5,899	2,658	315,770
55–59	79,023	65,444	42,487	21,741	21,483	6,320	4,254	1,643	242,395
60–64	53,931	45,240	28,134	14,899	15,121	4,424	2,606	848	165,203
65–69	38,299	33,330	19,224	10,430	11,111	3,140	1,630	415	117,579
70–74	13,523	10,331	8,505	3,513	3,974	841	426	179	41,292
75–79	4,695	3,487	3,114	1,095	1,521	269	114	48	14,343
80+	1,970	1,600	1,429	485	597	130	56	22	6,289
Not stated	2,493	0	20	0	12	7	1	14	2,547
All ages									
20–80+ years	1,100,725	893,509	607,047	330,949	275,556	82,046	59,732	33,261	3,382,825
Target age									
20–69 years	1,078,044	878,091	593,979	325,856	269,452	80,799	59,135	32,998	3,318,354

(a) The Victorian and Australian Capital Territory registers only register women with a Victorian or Australian Capital Territory address respectively.

Note: These numbers may be overestimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas; however, the likely impact of double counting is probably very small

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

Table 2b: Proportion of women participating in the National Cervical Screening Program by age, states and territories, 2002–2003

Age group	NSW	Vic ^(a)	Qld	WA ^(a)	SA	Tas	ACT ^(a)	NT	Australia
(Per cent)									
20–24	45.3	49.8	49.9	51.7	52.9	59.3	49.5	59.4	49.0
25–29	56.7	61.3	57.2	60.2	63.1	63.7	59.0	61.6	59.0
30–34	62.2	65.8	59.9	64.1	67.4	66.0	65.4	61.3	63.4
35–39	62.7	66.9	59.9	64.5	68.1	65.7	64.6	62.5	63.9
40–44	62.8	67.3	60.2	64.4	68.1	65.7	65.2	60.6	64.1
45–49	64.2	69.8	61.1	64.8	70.1	65.5	66.7	63.5	65.6
50–54	61.6	68.0	58.5	61.6	67.2	63.1	65.8	61.1	63.1
55–59	64.3	72.6	60.4	63.1	70.9	66.7	71.1	65.6	66.2
60–64	54.2	62.0	51.2	54.0	62.7	56.3	63.4	51.2	56.4
65–69	45.9	54.2	44.9	47.3	54.3	49.1	53.6	44.5	48.8
70–74	17.0	17.8	21.7	17.9	19.9	14.1	16.8	26.9	18.3
75–79	6.6	6.6	9.1	6.6	8.0	5.1	4.9	10.8	7.1
80+	2.0	2.6	3.0	2.0	2.2	1.7	1.9	4.2	2.2
All ages 20–80+ years									
Crude rate	52.8	57.9	52.5	55.5	57.4	55.9	58.1	59.7	54.7
AS rate	52.6	57.4	51.5	54.2	58.3	56.1	55.9	54.5	54.3
95% CI	52.5–52.7	57.3–57.5	51.4–51.6	54.0–54.3	58.0–58.5	55.7–56.5	55.5–56.4	53.8–55.1	54.3–54.4
Target age 20–69 years									
Crude rate	58.8	64.0	57.3	60.8	65.0	63.2	62.2	61.0	60.6
AS rate	58.8	64.2	57.2	60.6	65.1	63.1	62.7	60.2	60.7
95% CI	58.7–58.9	64.1–64.4	57.0–57.3	60.3–60.8	64.8–65.3	62.6–63.5	62.2–63.3	59.5–60.9	60.6–60.8

(a) The Victorian and Australian Capital Territory registers only register women with a Victorian or Australian Capital Territory address respectively.

Notes

1. These numbers may be overestimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas; however, the likely impact of double counting is probably very small
2. Rates are standardised to the 2001 Australian total population.
3. In 2001 the ABS carried out a full population Census and a national health survey. These led to the revision of the ABS estimated resident population (ERP) data, the introduction of a new Australian standard population for use in age standardisation and the production of new estimates of hysterectomy status among Australian women. The denominators for participation rates presented in this report have been calculated using the 2001 ABS National Health Survey hysterectomy fractions and the revised ERP values, and age-adjusted using the 2001 Australian standard population. The denominators for the equivalent rates in previous reports were calculated using the 1995 ABS National Health Survey hysterectomy fractions and unrevised ERP values, and age-adjusted using the 1991 Australian standard population. The combined effect of these changes is that participation rates presented in this report are on average between 1 and 2 percentage points lower than equivalent rates in previous reports.
4. Separate rates cannot be calculated for women in the 80–84 and 85 and over age groups because hysterectomy fractions are not available for these age groups; however a hysterectomy fraction is available for women aged 80 and over.

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

Indicator 2: Early re-screening

Table 3: Number of women with repeat screenings in the 21 months following a negative Pap smear in the 2002 cohort, states and territories, and Australia 2001 and 2002 cohorts

No. of tests	NSW	Vic ^(a)	Qld	WA	SA	Tas	ACT ^(a)	NT	Australia 2001 cohort	Australia 2002 cohort
Number of women										
0	39,274	33,695	19,504	11,277	10,408	2,783	2,277	1,391	121,736	120,609
1	13,392	12,494	5,995	3,863	2,714	816	681	379	43,594	40,334
2	1,593	1,680	849	484	294	103	90	69	5,296	5,162
3	244	451	209	60	42	15	21	9	1,092	1,051
4	35	94	40	10	11	0	1	4	206	195
5 or more	6	46	14	0	2	1	1	0	61	70

(a) The Victorian and Australian Capital Territory registries only register women with a Victorian and Australian Capital Territory address respectively.

Notes

- These numbers may be overestimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas; however, the likely impact of double counting is probably very small.
- The data for the 2001 cohort are not comparable with the data published in *Cervical Screening in Australia 2001–2002* because Northern Territory data have been included in this report

Source: State and territory Cervical Cytology Registry data.

Table 4: Percentage of women with repeat screenings in the 21 months following a negative Pap smear in the 2002 cohort, states and territories, and Australia 2001 and 2002 cohorts

No. of tests	NSW	Vic ^(a)	Qld	WA	SA	Tas	ACT ^(a)	NT	Australia 2001–2002	Australia 2002–2003
Percent										
0	72.0	69.5	73.3	71.9	77.3	74.9	74.1	75.1	70.8	72.0
1	24.6	25.8	22.5	24.6	20.1	21.9	22.2	20.5	25.3	24.1
2	2.9	3.5	3.2	3.1	2.2	2.8	2.9	3.7	3.1	3.1
3	0.4	0.9	0.8	0.4	0.3	0.4	0.7	0.5	0.6	0.6
4	0.1	0.2	0.2	0.1	0.1	0.0	0.0	0.2	0.1	0.1
5 or more	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(a) The Victorian and Australian Capital Territory registries only register women with a Victorian and Australian Capital Territory address respectively.

Notes

- These numbers may be overestimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas; however, the likely impact of double counting is probably very small.
- The data for the 2001 cohort are not comparable with the data published in *Cervical Screening in Australia 2001–2002* because Northern Territory data have been included in this report

Source: State and territory Cervical Cytology Registry data.

Indicator 3: Low-grade abnormality detection

Table 5a: Number of low- and high-grade abnormalities on histology for women aged 20–69 years, states and territories, 2002

Abnormalities	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Low-grade	6,477	3,015	4,273	2,661	1,205	473	332	345	18,781
High-grade	5,034	3,301	3,056	1,647	952	417	253	243	14,903
Ratio	1.29	0.91	1.40	1.62	1.27	1.13	1.31	1.42	1.26
Percentage of all screens in 2002									
Low-grade	1.1	0.6	1.3	1.4	0.8	1.1	1.0	1.8	1.0
High-grade	0.8	0.7	1.0	0.9	0.6	0.9	0.8	1.2	0.8

Notes

1. These numbers may be overestimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas; however, the likely impact of double counting is probably very small.
2. The Western Australian Registry has collated data for Indicator 3 according to the woman's age at time of biopsy result and selected the most abnormal result in the time period. This may result in discrepancies when comparing totals with Indicator 4 where the age is the woman's age at the time of the Pap smear.

Source: State and territory Cervical Cytology Registry data.

Table 5b: Number of low- and high-grade abnormalities on histology for women aged 20–69 years, states and territories, 2003

Abnormalities	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Low-grade	6,567	3,395	3,456	2,821	1,243	322	337	302	18,443
High-grade	4,655	3,591	3,121	1,648	942	336	317	230	14,840
Ratio	1.41	0.95	1.11	1.71	1.32	0.96	1.06	1.31	1.24
Percentage of all screens in 2003									
Low-grade	1.1	0.7	1.0	1.5	0.8	0.7	1.0	1.7	1.0
High-grade	0.8	0.7	0.9	0.9	0.6	0.8	1.0	1.3	0.8

Notes

1. These numbers may be overestimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas; however, the likely impact of double counting is probably very small.
2. The Western Australian Registry has collated data for Indicator 3 according to the woman's age at time of biopsy result and selected the most abnormal result in the time period. This may result in discrepancies when comparing totals with Indicator 4 where the age is the woman's age at the time of the Pap smear.

Source: State and territory Cervical Cytology Registry data.

Indicator 4: High-grade abnormality detection

Table 6a: Rate of histologically confirmed high-grade abnormalities per 1,000 women screened by age, states and territories, 2002

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
20–24	21.0	17.2	19.7	18.4	13.5	24.0	15.8	25.7	18.9
25–29	18.0	14.5	17.4	18.8	14.9	15.4	13.3	20.6	16.7
30–34	11.2	9.5	14.4	12.0	9.7	13.6	12.5	13.6	11.3
35–39	7.5	5.4	7.8	7.5	6.2	9.4	6.8	10.8	6.9
40–44	4.9	4.0	6.0	4.8	3.4	7.3	4.9	6.2	4.8
45–49	3.0	2.1	4.5	2.9	2.9	2.9	1.8	6.4	3.0
50–54	1.9	1.3	2.6	2.7	1.6	3.5	2.7	3.3	2.0
55–59	1.6	1.1	2.6	1.7	1.7	2.1	2.6	3.3	1.7
60–64	1.2	0.8	2.2	1.6	1.2	0.9	1.4	0.0	1.3
65–69	1.1	1.0	2.4	0.9	1.4	1.8	4.5	9.0	1.4
70–74	2.4	2.1	3.3	2.5	3.1	8.4	4.0	0.0	2.7
75–79	1.8	0.9	3.0	0.0	10.2	0.0	0.0	0.0	2.5
80–84	3.5	0.0	8.8	5.7	4.0	0.0	47.6	0.0	4.2
85+	3.5	0.0	30.6	11.6	55.6	0.0	0.0	0.0	13.5
All ages									
20–85+ years	8.1	6.5	9.4	8.4	6.3	9.2	7.6	12.5	7.8
Target age									
20–69 years	8.2	6.6	9.5	8.5	6.3	9.3	7.6	12.6	7.9

Note: These numbers may overestimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas; however, the likely impact of double counting is probably very small.

Source: State and territory Cervical Cytology Registry data.

Table 6b: Rate of histologically confirmed high-grade abnormalities per 1,000 women screened by age, states and territories, 2003

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
20–24	18.4	18.7	20.1	17.6	12.6	22.0	19.4	29.1	18.5
25–29	16.6	16.4	17.6	19.7	13.5	14.9	18.5	21.3	16.9
30–34	10.5	10.2	13.0	11.7	9.9	8.8	12.5	13.8	11.0
35–39	6.2	6.3	8.6	7.0	6.5	7.8	8.2	10.5	6.9
40–44	4.2	4.6	6.4	5.6	5.0	5.4	4.7	7.5	5.0
45–49	3.2	2.7	3.7	2.6	3.4	3.4	6.2	3.8	3.2
50–54	1.8	1.4	2.4	1.9	2.0	1.6	2.4	2.8	1.8
55–59	1.4	1.1	1.8	1.5	1.5	1.9	4.7	0.0	1.5
60–64	1.6	1.0	1.9	1.7	1.7	0.4	6.5	6.8	1.6
65–69	1.6	1.1	1.7	1.5	0.3	1.2	6.9	4.4	1.4
70–74	1.2	1.1	2.3	2.1	3.0	2.2	4.8	0.0	1.7
75–79	3.7	1.6	4.4	1.7	5.4	0.0	31.3	0.0	3.5
80–84	3.4	0.0	9.3	5.6	19.6	0.0	0.0	0.0	5.2
85+	6.2	7.8	9.4	0.0	38.5	0.0	0.0	0.0	9.2
All ages									
20–85+ years	7.4	7.2	9.0	8.2	6.3	7.4	9.8	12.7	7.7
Target age									
20–69 years	7.6	7.3	9.1	8.3	6.3	7.5	9.8	12.8	7.8

Note: These numbers may be overestimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas; however, the likely impact of double counting is probably very small.

Source: State and territory Cervical Cytology Registry data.

Table 7a: Number of histologically confirmed high-grade abnormalities by age, states and territories, 2002

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
20–24	1,152	806	680	358	192	113	58	66	3,425
25–29	1,378	894	760	434	254	78	57	65	3,920
30–34	1,004	705	664	322	198	82	59	44	3,078
35–39	640	375	352	194	127	56	30	30	1,804
40–44	406	262	254	122	69	46	21	15	1,195
45–49	211	122	161	62	51	15	7	13	642
50–54	113	60	79	47	24	15	9	5	352
55–59	72	38	53	20	19	7	6	3	218
60–64	35	21	30	13	10	2	2	0	113
65–69	23	18	23	5	8	3	4	2	86
70–74	19	13	15	5	7	4	1	0	64
75–79	5	2	5	0	9	0	0	0	21
80–84	3	0	5	1	1	0	1	0	11
85+	1	0	6	1	5	0	0	0	13
Age not stated	0	0	1	0	0	0	0	0	1
All ages									
20–85+ years	5,062	3,316	3,088	1,584	974	421	255	243	14,943
Target age									
20–69 years	5,034	3,301	3,056	1,577	952	417	253	243	14,833

Notes

1. These numbers may overestimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas; however, the likely impact of double counting is probably very small.
2. The Western Australian Registry has collated data for Indicator 4 according to the woman's age at time of first smear result in the time period. In the event there is no smear in the time period, the age is calculated according to the age at time of first result categorised as most abnormal biopsy in the time period. This may result in discrepancies when comparing totals with Indicator 3.

Source: State and territory Cervical Cytology Registry data.

Table 7b: Number of histologically confirmed high-grade abnormalities by age, states and territories, 2003

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
20–24	1,017	865	739	342	174	100	72	70	3,379
25–29	1,349	961	737	441	220	71	75	59	3,913
30–34	937	737	641	315	193	52	59	42	2,976
35–39	550	420	395	179	124	45	34	27	1,774
40–44	342	301	295	143	99	33	20	17	1,250
45–49	218	151	143	57	63	18	23	7	680
50–54	104	67	76	34	32	7	8	4	332
55–59	58	43	45	19	19	7	11	0	202
60–64	48	26	31	14	15	1	9	3	147
65–69	32	20	19	9	3	2	6	1	92
70–74	10	6	10	4	6	1	1	0	38
75–79	11	3	7	1	4	0	2	0	28
80–84	3	0	5	1	4	0	0	0	13
85+	2	2	2	0	3	0	0	0	9
Age not stated	0	0	0	0	0	0	0	0	0
All ages									
20–85+ years	4,681	3,602	3,145	1,559	959	337	320	230	14,833
Target age									
20–69 years	4,655	3,591	3,121	1,553	942	336	317	230	14,745

Notes

1. These numbers may be overestimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas; however, the likely impact of double counting is probably very small.
2. The Western Australian Registry has collated data for Indicator 4 according to the woman's age at time of first smear result in the time period. In the event there is no smear in the time period, the age is calculated according to the age at time of first result categorised as most abnormal biopsy in the time period. This may result in discrepancies when comparing totals with Indicator 3.

Source: State and territory Cervical Cytology Registry data.

Table 8a: Number of women screened by age, states and territories, 2002

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
20–24	54,880	46,923	34,551	19,450	14,198	4,715	3,676	2,568	180,961
25–29	76,499	61,866	43,714	23,061	17,059	5,055	4,278	3,156	234,688
30–34	89,887	74,403	46,004	26,730	20,357	6,046	4,727	3,245	271,399
35–39	85,841	69,551	45,033	26,005	20,480	5,976	4,427	2,784	260,097
40–44	83,130	65,928	42,340	25,315	20,270	6,269	4,288	2,418	249,958
45–49	69,803	56,897	35,401	21,614	17,643	5,201	3,790	2,023	212,372
50–54	58,172	47,711	29,858	17,274	14,825	4,336	3,280	1,493	176,949
55–59	43,921	35,963	20,348	11,916	11,371	3,346	2,335	907	130,107
60–64	30,177	25,118	13,923	8,079	8,053	2,343	1,447	485	89,625
65–69	20,961	17,777	9,555	5,535	5,849	1,655	885	221	62,438
70–74	7,840	6,280	4,572	1,977	2,242	478	250	92	23,731
75–79	2,770	2,181	1,665	619	880	151	57	26	8,349
80–84	866	705	566	176	248	51	21	9	2,642
85+	287	284	196	86	90	17	4	1	965
Age not stated	1,687	0	147	0	14	4	0	5	1,857
All ages									
20–85+ years	626,721	511,587	327,873	187,837	153,579	45,643	33,465	19,433	1,906,138
Target age									
20–69 years	613,271	502,137	320,727	184,979	150,105	44,942	33,133	19,300	1,868,594

Note: These numbers may be overestimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas; however, the likely impact of double counting is probably very small.

Source: State and territory Cervical Cytology Registry data.

Table 8b: Number of women screened by age, states and territory, 2003

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
20–24	55,354	46,191	36,771	19,483	13,801	4,555	3,711	2,398	182,264
25–29	81,077	58,604	41,976	22,387	16,091	4,755	4,061	2,762	231,713
30–34	89,266	71,966	49,221	26,823	19,532	5,897	4,727	3,060	270,492
35–39	88,253	66,669	45,697	25,728	19,213	5,767	4,141	2,572	258,040
40–44	81,964	64,992	46,086	25,631	19,883	6,066	4,237	2,254	251,113
45–49	69,169	56,132	38,788	22,034	17,324	5,292	3,730	1,855	214,324
50–54	58,634	47,650	32,050	17,726	14,947	4,438	3,279	1,438	180,162
55–59	40,689	37,996	24,995	12,690	11,842	3,616	2,352	882	135,062
60–64	29,460	25,393	16,183	8,452	8,249	2,484	1,382	444	92,047
65–69	20,399	18,903	11,040	5,883	5,964	1,736	870	228	65,023
70–74	8,286	5,455	4,421	1,884	1,982	447	210	96	22,781
75–79	2,950	1,883	1,594	579	738	137	64	26	7,971
80–84	890	616	536	177	208	52	26	9	2,514
85+	324	256	212	80	79	12	7	4	974
Age not stated	1,822	0	0	0	3	6	1	9	1,841
All ages									
20–85+ years	628,537	502,706	349,570	189,557	149,856	45,260	32,798	18,037	1,916,321
Target age									
20–69 years	614,265	494,496	342,807	186,837	146,846	44,606	32,490	17,893	1,880,240

Note: These numbers may be overestimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas; however, the likely impact of double counting is probably very small.

Source: State and territory Cervical Cytology Registry data.

Table 9a: Age-standardised high-grade abnormality rate on histology, per 1,000 women screened aged 20–69 years, states and territories, 2002

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
All ages									
20–85+ years									
AS rate	7.2	5.6	8.7	7.4	7.1	8.2	7.5	9.3	7.1
95% CI	7.0–7.5	5.4–5.8	8.1–9.3	6.8–8.0	6.1–8.2	7.4–9.1	5.3–10.0	8.0–10.6	7.0–7.3
Target age									
20–69 years									
AS rate	7.9	6.3	8.7	7.9	6.2	8.9	7.1	10.6	7.5
95% CI	7.7–8.1	6.1–6.5	8.4–9.0	7.5–8.3	5.8–6.6	8.1–9.8	6.3–8.1	9.1–12.1	7.4–7.6

Notes

1. Rates are standardised to the 2001 Australian total population.
2. These numbers may be overestimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas; however, the likely impact of double counting is probably very small.

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

Table 9b: Age-standardised high-grade abnormality rate on histology, per 1,000 women screened aged 20–69 years, states and territories, 2003

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
All ages									
20–85+ years									
AS rate	6.7	6.4	8.1	7.1	7.0	6.6	9.5	9.4	7.0
95% CI	6.4–7.0	6.1–6.7	7.7–8.6	6.7–7.6	6.0–8.1	5.9–7.4	7.7–11.5	8.1–10.8	6.9–7.2
Target age									
20–69 years									
AS rate	7.2	7.1	8.5	7.8	6.3	7.5	9.3	10.7	7.5
95% CI	7.0–7.4	6.8–7.3	8.2–8.8	7.4–8.2	5.9–6.7	6.7–8.3	8.3–10.5	9.3–12.3	7.4–7.6

Notes

1. Rates are standardised to the 2001 Australian total population.
2. These numbers may be overestimated because of double counting of some women between some states. This may be the result of difficulty in identifying state of residence for women in border areas, tests inadvertently transferred to interstate registers and inclusion of women resident overseas; however, the likely impact of double counting is probably very small.

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

Indicator 5.1: Incidence of micro-invasive cervical cancer

Table 10: New cases of micro-invasive cervical cancer by age, Australia, 1990–2001

Age group	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
0–4	0	0	0	0	0	0	0	0	0	0	0	0
5–9	0	0	0	0	0	0	0	0	0	0	0	0
10–14	0	0	0	0	0	0	0	0	0	0	0	0
15–19	0	1	0	0	0	0	1	0	0	0	0	0
20–24	4	0	5	1	7	1	6	3	2	2	1	2
25–29	14	14	14	9	17	17	18	10	18	14	12	12
30–34	32	31	32	32	36	42	18	27	18	14	25	22
35–39	25	40	25	26	30	29	35	22	26	21	14	15
40–44	26	30	24	17	25	30	23	22	22	15	8	6
45–49	19	9	13	15	26	23	12	11	16	7	16	15
50–54	6	11	12	17	9	12	11	8	13	7	6	9
55–59	8	7	12	5	5	9	7	8	3	8	4	4
60–64	8	7	8	7	10	11	6	6	5	2	3	4
65–69	6	7	9	10	6	7	10	2	2	3	0	2
70–74	2	4	2	4	6	5	4	4	3	2	0	2
75–79	3	3	2	1	3	5	2	2	2	1	1	3
80–84	0	2	0	0	0	1	1	0	2	0	2	0
85+	0	0	0	1	2	1	1	0	0	0	0	2
All ages												
0–85+ years	153	166	158	145	182	193	155	125	132	96	92	98
Target age												
20–69 years	148	156	154	139	171	181	146	119	125	93	89	91

Note: Cancer incidence estimates provided in this publication were made in March 2005. These estimates may be updated at any time as case details are added, modified or deleted in the national database. These modifications may occur several years after the initial diagnosis as additional case details are received by the state and territory cancer registries from data suppliers and then passed to the NCSC. This may have the impact of making incidence estimates for the same year incompatible between publications, but for the most part these changes are very small.

Source: National Cancer Statistics Clearing House (AIHW).

Table 11: Age-specific and age-standardised incidence rates of micro-invasive cervical cancer by age, Australia, 1990–2001

Age group	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
0–4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5–9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10–14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15–19	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
20–24	0.6	0.0	0.7	0.1	1.0	0.1	0.9	0.4	0.3	0.3	0.2	0.3
25–29	2.0	2.0	2.0	1.3	2.5	2.5	2.5	1.4	2.5	1.9	1.7	1.7
30–34	4.6	4.4	4.4	4.4	4.9	5.7	2.5	3.8	2.5	2.0	3.5	3.0
35–39	3.8	6.0	3.7	3.8	4.3	4.1	4.8	3.0	3.5	2.8	1.9	2.0
40–44	4.2	4.7	3.7	2.6	3.8	4.5	3.4	3.2	3.1	2.1	1.1	0.8
45–49	4.0	1.8	2.4	2.6	4.4	3.7	1.9	1.7	2.4	1.1	2.4	2.2
50–54	1.5	2.7	2.8	3.9	2.0	2.5	2.2	1.5	2.3	1.2	1.0	1.4
55–59	2.2	2.0	3.3	1.3	1.3	2.3	1.7	1.9	0.7	1.8	0.8	0.8
60–64	2.2	1.9	2.2	1.9	2.8	3.1	1.7	1.7	1.3	0.5	0.8	1.0
65–69	1.7	2.0	2.5	2.8	1.7	2.0	2.8	0.6	0.6	0.9	0.0	0.6
70–74	0.7	1.4	0.7	1.3	1.9	1.5	1.2	1.2	0.9	0.6	0.0	0.6
75–79	1.4	1.3	0.9	0.4	1.3	2.1	0.8	0.8	0.7	0.4	0.3	1.0
80–84	0.0	1.4	0.0	0.0	0.0	0.6	0.6	0.0	1.1	0.0	1.1	0.0
85+	0.0	0.0	0.0	0.8	1.6	0.7	0.7	0.0	0.0	0.0	0.0	1.1
All ages 0–85+ years												
Crude rate	1.8	1.9	1.8	1.6	2.0	2.1	1.7	1.3	1.4	1.0	1.0	1.0
AS rate (A)	1.9	2.0	1.9	1.7	2.0	2.2	1.7	1.4	1.4	1.0	1.0	1.0
95% CI	1.6–2.2	1.7–2.3	1.6–2.2	1.4–2.0	1.8–2.4	1.9–2.5	1.4–2.0	1.1–1.6	1.2–1.7	0.8–1.2	0.8–1.2	0.8–1.2
AS rate (W)	1.7	1.8	1.7	1.5	1.9	1.9	1.5	1.2	1.3	0.9	0.9	0.9
95% CI	1.4–2.0	1.5–2.1	1.4–2.0	1.3–1.8	1.6–2.2	1.7–2.2	1.3–1.8	1.0–1.5	1.1–1.5	0.8–1.1	0.7–1.1	0.7–1.1
Target age 20–69 years												
Crude rate	2.8	2.9	2.8	2.5	3.0	3.2	2.5	2.0	2.1	1.5	1.5	1.5
AS rate (A)	2.8	2.9	2.8	2.6	3.0	3.2	2.5	2.0	2.1	1.5	1.5	1.5
95% CI	2.4–3.3	2.5–3.4	2.4–3.3	2.1–3.0	2.6–3.5	2.7–3.7	2.1–3.0	1.7–2.4	1.7–2.5	1.2–1.9	1.2–1.8	1.2–1.8
AS rate (W)	2.8	2.8	2.8	2.5	3.0	3.1	2.5	2.0	2.1	1.5	1.5	1.5
95% CI	2.3–3.2	2.4–3.3	2.4–3.3	2.1–2.9	2.6–3.5	2.7–3.6	2.1–2.9	1.7–2.4	1.7–2.4	1.2–1.9	1.2–1.8	1.2–1.8

Note: Rates are expressed per 100,000 women and age-standardised to the Australian 2001 population (A) and the WHO World Standard Population (W).

Source: National Cancer Statistics Clearing House (AIHW).

Indicator 5.2: Incidence of invasive squamous, adenocarcinoma, adenosquamous and other cervical cancer

Table 12: New cases of cervical cancer by age, Australia, 1990–2001

Age group	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
0–4	0	0	0	0	0	0	0	0	0	0	0	0
5–9	0	0	0	0	1	0	0	0	0	0	0	0
10–14	0	0	0	0	0	0	0	0	0	0	0	0
15–19	1	1	0	1	1	2	1	1	2	0	2	2
20–24	13	12	10	10	16	4	15	10	10	8	7	7
25–29	59	48	54	38	49	53	45	44	48	57	40	41
30–34	114	120	109	105	123	113	68	79	83	74	84	59
35–39	156	140	126	129	132	111	142	102	102	101	70	88
40–44	140	150	130	128	133	118	117	103	101	104	81	67
45–49	121	104	101	102	132	98	103	78	111	77	75	101
50–54	69	87	78	90	86	58	81	76	65	67	59	78
55–59	80	63	78	78	73	69	63	51	52	49	56	53
60–64	78	80	75	76	88	71	61	53	56	64	62	47
65–69	76	89	89	92	95	78	65	58	54	54	52	43
70–74	67	79	72	64	79	69	62	45	59	47	57	42
75–79	51	48	52	46	66	51	51	45	44	40	50	39
80–84	29	35	34	37	40	30	41	32	39	33	36	40
85+	24	33	22	21	22	33	25	28	29	19	23	28
All ages												
0–85+ years	1,078	1,089	1030	1017	1136	958	940	805	855	794	754	735
Target age												
20–69 years	906	893	850	848	927	773	760	654	682	655	586	584

Notes

1. The table includes the incidence of micro-invasive and invasive cervical cancers.
2. Cancer incidence estimates provided in this publication were made in March 2005. These estimates may be updated at any time as case details are added, modified or deleted in the national database. These modifications may occur several years after the initial diagnosis as additional case details are received by the state and territory cancer registries from data suppliers and then passed to the NCSC. This may have the impact of making incidence estimates for the same year incompatible between publications, but for the most part these changes are very small.

Source: National Cancer Statistics Clearing House (AIHW).

Table 13: Age-specific and age-standardised incidence rates of cervical cancer by age, Australia, 1990–2001

Age group	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
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	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10–14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15–19	0.1	0.2	0.0	0.2	0.2	0.3	0.2	0.2	0.3	0.0	0.3	0.3
20–24	1.9	1.7	1.4	1.4	2.3	0.6	2.2	1.5	1.5	1.2	1.1	1.1
25–29	8.3	6.9	7.8	5.6	7.2	7.7	6.4	6.1	6.5	7.8	5.5	5.8
30–34	16.4	16.9	15.0	14.4	16.7	15.5	9.4	11.0	11.7	10.4	11.7	8.0
35–39	23.8	21.1	18.6	18.7	18.9	15.6	19.5	13.7	13.6	13.3	9.3	11.7
40–44	22.6	23.5	20.3	19.8	20.2	17.7	17.2	14.9	14.4	14.6	11.1	9.0
45–49	25.3	20.7	18.8	17.8	22.2	15.9	16.1	12.1	17.0	11.6	11.1	14.8
50–54	17.2	21.1	18.4	20.7	19.0	12.2	16.3	14.1	11.4	11.2	9.5	12.0
55–59	22.3	17.6	21.3	20.8	18.9	17.4	15.5	12.1	12.0	10.8	11.8	10.7
60–64	21.0	21.6	20.5	21.1	24.7	19.9	17.1	14.6	15.0	16.7	15.6	11.5
65–69	21.8	25.3	25.2	25.9	26.8	22.0	18.3	16.5	15.5	15.6	15.1	12.4
70–74	24.8	28.0	24.6	21.1	24.9	21.4	19.0	13.7	17.8	14.1	17.1	12.5
75–79	23.1	21.3	22.7	20.0	29.0	21.9	20.9	17.5	16.4	14.2	17.4	13.4
80–84	20.8	24.1	22.5	23.4	23.9	17.4	23.2	17.8	21.4	18.0	18.9	19.8
85+	22.7	30.0	19.0	17.2	17.3	24.6	17.7	18.7	18.5	11.4	13.1	15.3
All ages 0–85+ years												
Crude rate	12.6	12.6	11.7	11.5	12.7	10.6	10.2	8.6	9.1	8.3	7.8	7.5
AS rate (A)	13.4	13.2	12.2	11.9	13.0	10.7	10.3	8.7	9.0	8.3	7.7	7.3
AS rate (W)	11.4	11.1	10.4	10.1	11.0	9.1	8.7	7.3	7.6	7.1	6.5	6.2
Target age 20–69 years												
Crude rate	17.1	16.5	15.5	15.3	16.5	13.6	13.1	11.2	11.5	10.9	9.6	9.5
AS rate (A)	17.7	17.1	16.0	15.8	16.9	13.8	13.4	11.3	11.6	10.9	9.7	9.5
AS rate (W)	16.9	16.2	15.2	14.9	16.0	13.2	12.7	10.8	11.1	10.5	9.2	9.0

Notes: Rates are expressed per 100,000 women and age-standardised to the Australian 2001 population (A) and the WHO World Standard Population (W).

Source: National Cancer Statistics Clearing House (AIHW).

Table 14a: New cases of cervical cancer by age, states and territories, 1994–1997

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
0–4	0	0	0	0	0	0	0	0	0
5–9	0	0	0	0	1	0	0	0	1
10–14	0	0	0	0	0	0	0	0	0
15–19	3	0	2	0	0	0	0	0	5
20–24	10	11	18	3	0	3	0	0	45
25–29	51	46	45	21	16	5	4	3	191
30–34	134	90	79	32	25	16	4	3	383
35–39	165	114	110	39	29	12	7	11	487
40–44	142	138	83	54	28	9	11	6	471
45–49	151	97	80	37	26	10	5	5	411
50–54	116	74	61	22	12	5	5	6	301
55–59	90	63	46	27	14	7	7	2	256
60–64	90	79	38	31	18	11	2	4	273
65–69	105	73	58	30	18	8	1	3	296
70–74	96	56	46	25	20	7	3	2	255
75–79	69	65	41	13	15	8	0	2	213
80–84	44	45	19	15	11	4	5	0	143
85+	37	34	19	12	5	1	0	0	108
All ages									
0–85+ years	1,303	985	745	361	238	106	54	47	3,839
Target age									
20–69 years	1,054	785	618	296	186	86	46	43	3,114

Source: National Cancer Statistics Clearing House (AIHW).

Table 14b: Age-specific and age-standardised incidence rates of cervical cancer, states and territories, 1994–1997

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
0–4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5–9	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
10–14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15–19	0.4	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.2
20–24	1.1	1.6	3.4	1.1	0.0	4.5	0.0	0.0	1.6
25–29	5.4	6.4	8.9	7.8	7.5	7.5	7.7	8.3	6.8
30–34	13.6	12.3	15.2	11.4	10.9	21.9	7.7	9.0	13.2
35–39	17.0	15.8	21.3	13.7	12.5	15.9	13.5	36.5	16.9
40–44	15.7	20.5	17.2	20.0	12.8	12.9	21.8	22.9	17.5
45–49	18.1	15.5	17.7	15.4	12.6	15.5	10.5	23.1	16.5
50–54	17.3	15.0	17.1	12.1	7.3	9.7	15.0	40.8	15.3
55–59	16.1	15.3	16.4	18.3	10.3	16.1	30.2	22.0	15.9
60–64	17.8	21.2	15.7	24.5	14.4	28.1	11.4	66.0	19.0
65–69	20.8	19.9	24.5	25.3	13.9	21.0	6.4	70.6	20.9
70–74	20.6	16.6	21.6	24.1	16.2	19.6	21.3	69.1	19.7
75–79	19.9	26.3	25.5	17.0	16.3	29.2	0.0	107.2	22.2
80–84	17.7	24.7	16.7	25.9	16.4	20.2	79.9	0.0	20.5
85+	19.1	22.8	21.3	25.6	9.3	6.8	0.0	0.0	19.5
All ages 0–85+ years									
Crude rate	10.5	10.7	11.3	10.4	8.0	11.1	8.8	13.8	10.5
AS rate (A)	10.5	10.7	11.7	10.9	7.7	11.1	9.9	21.7	10.7
95% CI	10.0–11.1	10.1–11.4	10.9–12.6	9.8–12.1	6.8–8.8	9.1–13.4	7.4–13.0	14.8–30.4	10.3–11.0
AS rate (W)	8.9	9.0	10.0	9.1	6.6	9.6	8.2	17.8	9.0
95% CI	8.4–9.4	8.4–9.6	9.3–10.8	8.2–10.1	5.8–7.5	7.8–11.6	6.2–10.8	12.5–24.3	8.7–9.3
Target age 20–69 years									
Crude rate	13.5	13.5	15.0	13.5	10.0	14.6	11.5	20.1	13.6
AS rate (A)	13.8	13.8	15.3	13.9	9.9	14.5	12.4	26.2	13.8
95% CI	13.0–14.6	12.9–14.8	14.1–16.6	12.4–15.6	8.6–11.5	11.6–17.9	9.0–16.6	18.1–36.3	13.3–14.3
AS rate (W)	13.0	13.1	14.7	13.2	9.5	14.1	11.7	24.3	13.1
95% CI	12.3–13.9	12.2–14.0	13.6–15.9	11.7–14.8	8.2–11.0	11.3–17.4	8.5–15.7	16.9–33.5	12.7–13.6

Note: Rates are expressed per 100,000 women and age-standardised to the Australian 2001 population (A) and the WHO World Standard Population (W).

Source: National Cancer Statistics Clearing House (AIHW).

Table 15a: Number of new cases of cervical cancer by age, states and territories, 1998–2001

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
0–4	0	0	0	0	0	0	0	0	0
5–9	0	0	0	0	0	0	0	0	0
10–14	0	0	0	0	0	0	0	0	0
15–19	3	1	1	1	0	0	0	0	6
20–24	15	4	8	3	0	2	0	0	32
25–29	58	34	45	18	13	8	7	3	186
30–34	105	57	64	36	25	8	4	1	300
35–39	122	69	86	28	25	17	8	6	361
40–44	109	74	92	43	23	6	2	4	353
45–49	132	77	67	46	25	8	3	6	364
50–54	106	49	53	27	19	7	3	5	269
55–59	73	51	40	17	14	9	2	4	210
60–64	77	57	53	17	21	3	0	1	229
65–69	78	46	36	22	11	5	3	2	203
70–74	81	48	32	25	12	4	3	0	205
75–79	66	42	28	16	15	2	2	2	173
80–84	53	43	21	19	11	1	0	0	148
85+	35	29	14	11	7	2	1	0	99
All ages									
0–85+ years	1,113	681	640	329	221	82	38	34	3,138
Target age									
20–69 years	875	518	544	257	176	73	32	32	2,507

Source: National Cancer Statistics Clearing House (AIHW).

Table 15b: Age-specific and age-standardised incidence rates of cervical cancer, states and territories, 1998–2001

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
0–4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5–9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10–14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15–19	0.4	0.2	0.2	0.4	0.0	0.0	0.0	0.0	0.2
20–24	1.8	0.6	1.6	1.2	0.0	3.5	0.0	0.0	1.2
25–29	5.9	4.6	8.3	6.4	6.3	12.7	13.2	8.0	6.4
30–34	10.9	7.7	12.2	12.8	11.7	12.2	7.9	2.9	10.4
35–39	12.0	9.2	15.4	9.4	10.7	23.1	15.5	18.4	12.0
40–44	11.2	10.3	17.3	14.8	10.1	8.3	4.0	13.9	12.2
45–49	14.8	11.6	13.5	17.1	11.6	11.9	6.1	23.9	13.6
50–54	13.0	8.1	11.6	11.5	9.4	11.3	6.8	25.2	11.0
55–59	11.5	11.0	11.6	9.8	9.1	18.5	6.9	32.2	11.3
60–64	14.2	14.3	19.2	11.9	15.9	7.2	0.0	13.3	14.7
65–69	16.0	12.8	15.1	18.0	9.1	13.4	18.4	41.3	14.6
70–74	17.1	13.8	14.2	22.5	9.8	11.4	20.2	0.0	15.4
75–79	16.4	14.3	14.8	17.4	13.9	6.5	16.0	89.2	15.3
80–84	19.5	22.2	16.4	31.0	15.2	4.7	0.0	0.0	19.6
85+	14.6	16.1	12.5	18.8	10.6	11.1	16.4	0.0	14.5
All ages 0–85+ years									
Crude rate	8.6	7.1	9.0	8.9	7.3	8.6	6.0	9.2	8.2
AS rate (A)	8.4	6.9	9.1	9.0	6.9	8.6	6.3	12.7	8.1
95% CI	7.9–8.9	6.4–7.4	8.4–9.9	8.0–10.0	6.0–7.9	6.8–10.7	4.4–8.6	8.1–18.7	7.8–8.3
AS rate (W)	7.1	5.7	7.9	7.5	5.9	7.7	5.4	10.4	6.8
95% CI	6.7–7.5	5.3–6.2	7.3–8.5	6.7–8.4	5.1–6.8	6.1–9.6	3.8–7.4	6.9–15.0	6.6–7.1
Target age 20–69 years									
Crude rate	10.7	8.5	12.2	10.9	9.3	12.4	7.7	13.6	10.4
AS rate (A)	10.7	8.6	12.3	11.0	9.2	12.3	7.8	16.3	10.4
95% CI	10.0–11.5	7.9–9.3	11.3–13.4	9.7–12.4	7.9–10.7	9.7–15.5	5.3–11.0	10.7–23.5	10.0–10.8
AS rate (W)	10.2	8.1	11.8	10.5	8.8	12.1	7.7	15.1	9.9
95% CI	9.6–10.9	7.5–8.9	10.8–12.8	9.2–11.8	7.5–10.2	9.4–15.2	5.2–10.8	10.0–21.7	9.5–10.3

Note: Rates are expressed per 100,000 women and age-standardised to the Australian 2001 population (A) and the WHO World Standard Population (W).

Source: National Cancer Statistics Clearing House (AIHW).

Table 16a: New cases of cervical cancer by histological type for women aged 20–69 years, Australia, 1990–2001

Histological type	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Squamous	633	633	601	590	618	539	527	447	476	459	391	393
Adenocarcinoma	149	144	142	142	193	148	149	129	140	130	119	116
Adenosquamous	50	42	51	47	40	34	40	33	30	23	30	30
Other	74	74	56	69	76	52	44	45	36	43	46	45
Total	906	893	850	848	927	773	760	654	682	655	586	584
<i>Micro-invasive</i>	<i>148</i>	<i>156</i>	<i>154</i>	<i>139</i>	<i>171</i>	<i>181</i>	<i>146</i>	<i>119</i>	<i>125</i>	<i>93</i>	<i>89</i>	<i>91</i>

Source: National Cancer Statistics Clearing House (AIHW).

Table 16b: Age-standardised incidence rates for cervical cancer by histological type for women aged 20–69 years, Australia, 1990–2001

Histological type	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Squamous	12.4	12.2	11.3	11.1	11.3	9.6	9.3	7.8	8.1	7.7	6.5	6.4
Adenocarcinoma	2.9	2.8	2.7	2.6	3.5	2.6	2.6	2.2	2.4	2.2	2.0	1.9
Adenosquamous	1.0	0.8	1.0	0.9	0.7	0.6	0.7	0.6	0.5	0.4	0.5	0.5
Other	1.5	1.4	1.0	1.2	1.4	0.9	0.8	0.8	0.6	0.7	0.8	0.7
<i>Micro-invasive</i>	<i>2.8</i>	<i>2.9</i>	<i>2.8</i>	<i>2.6</i>	<i>3.0</i>	<i>3.2</i>	<i>2.5</i>	<i>2.0</i>	<i>2.1</i>	<i>1.5</i>	<i>1.5</i>	<i>1.5</i>

Note: Rates are expressed per 100,000 women and age-standardised to the Australian 2001 population.

Source: National Cancer Statistics Clearing House (AIHW).

Table 17a: New cases of cervical cancer by histological type for women, all ages 0–85+ years, Australia, 1990–2001

Histological type	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Squamous	760	774	740	696	767	664	667	542	597	565	511	497
Adenocarcinoma	172	172	158	164	223	173	169	159	165	148	138	138
Adenosquamous	56	49	56	56	50	39	47	39	35	25	31	34
Other	90	94	76	101	96	82	57	65	58	56	74	66
Total	1,078	1,089	1,030	1,017	1,136	958	940	805	855	794	754	735
<i>Micro-invasive</i>	<i>153</i>	<i>166</i>	<i>158</i>	<i>145</i>	<i>182</i>	<i>193</i>	<i>155</i>	<i>125</i>	<i>132</i>	<i>96</i>	<i>92</i>	<i>98</i>

Source: National Cancer Statistics Clearing House (AIHW).

Table 17b: Age-standardised incidence rates for cervical cancer by histological type for women, all ages 0–85+ years, Australia, 1990–2001

Histological type	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Squamous	9.4	9.4	8.8	8.2	8.8	7.4	7.3	5.9	6.3	5.9	5.2	5.0
Adenocarcinoma	2.1	2.1	1.9	1.9	2.5	1.9	1.9	1.7	1.8	1.5	1.4	1.4
Adenosquamous	0.7	0.6	0.7	0.6	0.6	0.4	0.5	0.4	0.4	0.3	0.3	0.3
Other	1.1	1.1	0.9	1.1	1.1	0.9	0.6	0.7	0.6	0.6	0.7	0.6
<i>Micro-invasive</i>	<i>1.9</i>	<i>2.0</i>	<i>1.9</i>	<i>1.7</i>	<i>2.0</i>	<i>2.2</i>	<i>1.7</i>	<i>1.4</i>	<i>1.4</i>	<i>1.0</i>	<i>1.0</i>	<i>1.0</i>

Note: Rates are expressed per 100,000 women and age-standardised to the Australian 2001 population.

Source: National Cancer Statistics Clearing House (AIHW).

Indicator 5.3: Incidence by location

Table 18: New cases of cervical cancer by age and location, 1994–1997 and 1998–2001

Age group	Major cities		Regional		Remote	
	1994–1997	1998–2001	1994–1997	1998–2001	1994–1997	1998–2001
0–4	0	0	0	0	0	0
5–9	1	0	0	0	0	0
10–14	0	0	0	0	0	0
15–19	3	4	2	2	0	0
20–24	30	20	14	11	0	1
25–29	122	124	56	55	7	5
30–34	237	202	127	87	10	8
35–39	316	216	150	126	17	13
40–44	311	221	137	113	12	14
45–49	291	235	100	110	12	13
50–54	198	184	89	76	9	8
55–59	168	130	75	68	10	7
60–64	178	142	86	72	6	9
65–69	203	131	83	68	9	2
70–74	171	147	74	53	7	2
75–79	137	120	70	51	6	1
80–84	95	105	44	42	3	0
85+	83	65	24	32	1	2
All ages						
0–85+ years	2,543	2,046	1,131	965	109	85
Target age						
20–69 years	2,053	1,606	917	785	92	79

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

Source: National Cancer Statistics Clearing House (AIHW).

Table 19: Age-specific and age-standardised incidence rates for cervical cancer by age and location, 1994–1997 and 1998–2001

Age group	Major cities		Regional		Remote	
	1994–1997	1998–2001	1994–1997	1998–2001	1994–1997	1998–2001
0–4	0.0	0.0	0.0	0.0	0.0	0.0
5–9	0.1	0.0	0.0	0.0	0.0	0.0
10–14	0.0	0.0	0.0	0.0	0.0	0.0
15–19	0.2	0.2	0.3	0.3	0.0	0.0
20–24	1.5	1.1	2.1	1.7	0.0	1.6
25–29	6.2	6.0	7.5	7.4	7.8	6.5
30–34	12.1	10.2	14.8	10.8	12.0	9.8
35–39	16.6	10.7	16.6	13.6	21.5	15.8
40–44	17.3	11.6	16.5	12.4	18.9	19.9
45–49	17.2	13.2	13.3	13.3	22.1	22.4
50–54	15.1	11.2	14.7	10.0	20.9	14.6
55–59	15.9	10.7	14.4	11.2	29.3	18.4
60–64	19.1	14.1	18.0	13.6	24.0	29.3
65–69	21.8	14.6	17.8	14.5	39.0	8.8
70–74	19.7	16.7	18.0	12.1	41.4	13.7
75–79	21.2	15.8	23.0	14.2	45.6	7.6
80–84	20.1	20.6	20.3	17.6	38.3	0.3
85+	21.9	14.0	14.5	15.2	10.4	24.8
All ages 0–85+ years						
AS rate (A)	10.6	7.9	10.2	8.0	14.8	10.1
95% CI	10.1–11.0	7.5–8.2	9.6–10.8	7.5–8.6	12.0–18.0	8.0–12.5
AS rate (W)	8.9	6.6	8.7	6.9	12.2	8.7
95% CI	8.5–9.2	6.3–6.9	8.1–9.2	6.4–7.3	10.0–14.7	6.9–10.8
Target age 20–69 years						
AS rate (A)	13.7	10.0	13.2	10.6	18.0	14.3
95% CI	13.1–14.3	9.5–10.5	12.4–14.1	9.9–11.4	14.4–22.1	11.3–17.9
AS rate (W)	13.0	9.5	12.7	10.2	16.9	13.6
95% CI	12.4–13.5	9.0–10.0	11.8–13.5	9.5–10.9	13.5–20.7	10.7–16.9

Notes

1. The numbers are presented as 4-year rolling blocks of data.
2. Rates are expressed per 100,000 women and age-standardised to the Australian 2001 population (A) and the WHO World Standard Population (W).

Source: National Cancer Statistics Clearing House (AIHW).

Indicator 6.1: Mortality

Table 20: Deaths from cervical cancer by age, Australia, 1983–2003

Age group	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03
0–4	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
10–14	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	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0
20–24	1	0	0	2	2	0	1	1	3	0	0	0	0	1	0	3	1	1	0	2	0
25–29	8	10	6	6	5	3	3	10	5	5	2	6	3	1	2	6	2	4	1	2	5
30–34	12	13	20	12	15	12	21	14	13	15	11	11	7	13	8	5	6	10	11	6	13
35–39	18	19	17	16	20	15	18	30	25	19	25	11	16	23	18	19	7	12	12	9	12
40–44	20	20	18	26	20	24	24	36	19	27	32	28	21	20	16	19	18	14	19	13	12
45–49	28	26	21	24	19	27	31	36	29	26	23	35	32	30	28	16	25	27	23	15	22
50–54	26	25	25	25	24	19	27	17	21	13	29	37	26	13	21	24	15	19	21	32	17
55–59	40	21	31	41	32	41	20	25	25	23	20	26	34	22	24	15	14	19	20	15	19
60–64	36	41	41	41	28	41	33	34	33	31	25	24	30	21	22	28	15	24	25	19	21
65–69	49	43	52	50	46	41	54	43	35	25	30	37	37	29	30	19	21	26	20	18	20
70–74	30	33	43	32	55	34	48	25	37	45	38	33	43	41	36	28	30	37	28	18	23
75–79	20	29	29	23	29	35	29	32	30	32	28	30	30	38	32	26	26	25	30	26	29
80–84	22	26	26	23	20	34	24	8	22	35	24	26	27	22	27	26	19	23	28	26	21
85+	21	21	29	24	16	17	22	25	32	23	24	24	20	24	30	31	21	26	24	26	24
All ages																					
0–85+ years	330	327	359	343	329	343	355	337	329	319	311	329	328	296	294	265	220	267	262	227	238
Target age																					
20–69 years	238	218	230	242	210	222	231	246	208	184	197	216	207	172	169	154	124	156	152	131	141

Note: Deaths were derived by year of registration.

Source: AIHW Mortality Database.

Table 21: Age-specific and age-standardised death rates for cervical cancer by age, Australia, 1983–2003

Age group	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03
0–4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5–9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10–14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15–19	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20–24	0.1	0.0	0.0	0.3	0.3	0.0	0.1	0.1	0.4	0.0	0.0	0.0	0.0	0.1	0.0	0.5	0.2	0.2	0.0	0.3	0.0
25–29	1.2	1.5	0.9	0.9	0.7	0.4	0.4	1.4	0.7	0.7	0.3	0.9	0.4	0.1	0.3	0.8	0.3	0.6	0.1	0.3	0.7
30–34	1.9	2.1	3.1	1.9	2.3	1.8	3.0	2.0	1.8	2.0	1.5	1.5	0.9	1.8	1.1	0.7	0.8	1.4	1.5	0.8	1.7
35–39	3.2	3.2	2.8	2.5	3.1	2.3	2.7	4.6	3.7	2.7	3.6	1.5	2.2	3.1	2.4	2.5	0.9	1.6	1.6	1.2	1.6
40–44	4.5	4.3	3.7	5.4	3.7	4.1	3.9	5.9	2.9	4.3	5.0	4.3	3.1	2.9	2.3	2.7	2.5	1.9	2.6	1.7	1.6
45–49	7.6	6.9	5.2	5.7	4.4	6.3	6.9	7.6	5.8	4.9	3.9	5.9	5.2	4.7	4.4	2.4	3.8	4.0	3.4	2.2	3.1
50–54	7.2	7.0	7.1	6.8	6.4	4.9	7.1	4.2	5.0	3.0	6.8	8.2	5.6	2.6	3.9	4.2	2.5	3.0	3.2	4.9	2.6
55–59	10.7	5.5	8.4	11.1	8.8	11.3	5.4	6.8	7.1	6.2	5.2	6.9	8.7	5.3	5.7	3.5	3.1	4.0	4.0	2.8	3.3
60–64	10.6	11.5	11.3	11.2	7.7	11.1	9.0	9.3	9.0	8.6	7.1	6.6	8.5	5.8	6.0	7.5	3.9	6.0	6.1	4.5	4.9
65–69	16.8	14.9	17.8	16.4	14.6	12.5	15.7	12.4	10.0	7.2	8.5	10.5	10.5	8.3	8.5	5.4	6.1	7.5	5.8	5.1	5.5
70–74	12.5	13.2	16.6	12.3	20.5	12.8	18.1	9.4	13.2	15.4	12.6	10.5	13.4	12.6	11.0	8.5	9.0	11.1	8.4	5.4	7.0
75–79	11.6	16.7	16.0	11.8	14.8	17.1	13.7	14.7	13.5	14.1	12.4	13.3	13.0	15.7	12.5	9.7	9.3	8.7	10.3	8.8	9.7
80–84	19.9	23.4	22.9	19.0	15.8	26.6	17.6	5.6	14.8	23.3	14.9	15.8	15.9	12.2	15.0	14.3	10.4	12.1	13.9	12.3	9.5
85+	25.6	24.7	33.1	24.9	16.1	16.7	20.9	23.2	29.4	19.5	19.3	18.4	14.6	16.6	20.1	19.8	12.6	14.8	13.1	13.6	12.2
All ages 0–85+ years																					
AS rate (A)	4.9	4.7	5.0	4.7	4.4	4.5	4.5	4.2	4.0	3.8	3.6	3.8	3.7	3.2	3.1	2.7	2.2	2.6	2.5	2.1	2.2
AS rate (W)	3.8	3.6	3.8	3.7	3.4	3.4	3.5	3.3	3.1	2.8	2.8	2.9	2.8	2.4	2.3	2.1	1.7	2.0	1.9	1.6	1.7
Target age 20–69 years																					
AS rate (A)	5.4	4.9	5.0	5.2	4.4	4.6	4.6	4.8	4.0	3.5	3.8	4.1	3.8	3.0	3.0	2.7	2.1	2.6	2.5	2.1	2.2
AS rate (W)	5.0	4.5	4.6	4.8	4.1	4.2	4.3	4.5	3.8	3.3	3.4	3.7	3.5	2.8	2.7	2.5	1.9	2.4	2.3	1.9	2.0

Notes: Rates are expressed per 100,000 women and age-standardised to the Australian 2001 population (A) and the WHO World Standard Population (W).

Source: AIHW Mortality Database.

Table 22: Deaths from cervical cancer by age, states and territories, 1996–1999

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
0–4	0	0	0	0	0	0	0	0	0
5–9	0	0	0	0	0	0	0	0	0
10–14	0	0	0	0	0	0	0	0	0
15–19	0	0	0	0	0	0	0	0	0
20–24	1	2	2	0	0	0	0	0	5
25–29	0	3	4	2	1	0	1	0	11
30–34	7	8	7	8	1	1	0	0	32
35–39	27	13	11	7	4	3	0	2	67
40–44	30	16	14	6	0	1	4	2	73
45–49	40	19	14	10	8	3	3	3	100
50–54	29	12	16	6	3	3	3	1	73
55–59	26	12	17	9	6	3	1	1	75
60–64	27	19	18	6	5	10	0	1	86
65–69	37	20	15	14	7	2	4	1	100
70–74	47	38	22	12	12	2	1	2	136
75–75	43	28	29	6	9	6	0	2	123
80–84	31	35	13	8	5	2	0	0	94
85+	41	19	14	18	9	3	2	0	106
All ages									
0–85+ years	386	244	196	112	70	39	19	15	1,081
Target age									
20–69 years	224	124	118	68	35	26	16	11	622

Notes

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

Source: AIHW Mortality Database.

Table 23: Age-specific and age-standardised death rates for cervical cancer by age, states and territories, 1996–1999

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
0–4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5–9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10–14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15–19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20–24	0.1	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.2
25–29	0.0	0.4	0.7	0.7	0.5	0.0	1.9	0.0	0.4
30–34	0.7	1.1	1.4	2.9	0.5	1.5	0.0	0.0	1.1
35–39	2.7	1.8	2.0	2.4	1.7	3.9	0.0	6.3	2.2
40–44	3.2	2.3	2.8	2.1	0.0	1.4	8.0	7.2	2.6
45–49	4.6	2.9	2.9	3.9	3.8	4.5	6.1	12.8	3.8
50–54	3.9	2.2	3.9	2.9	1.6	5.3	7.7	5.8	3.3
55–59	4.4	2.8	5.5	5.6	4.2	6.6	3.9	9.4	4.4
60–64	5.2	5.0	7.1	4.5	3.9	25.2	0.0	15.0	5.8
65–69	7.4	5.5	6.3	11.6	5.6	5.3	25.3	22.0	7.1
70–74	10.0	11.0	10.0	11.2	9.7	5.6	6.9	63.4	10.3
75–75	11.4	10.3	16.5	7.1	8.9	20.6	0.0	96.0	11.7
80–84	12.0	18.8	10.8	13.5	7.2	9.7	0.0	0.0	13.0
85+	19.0	11.6	14.0	34.4	15.0	18.4	38.9	0.0	17.3
All ages 0–85+ years									
AS rate (A)	2.9	2.5	3.0	3.2	2.0	3.9	3.5	8.9	2.8
95% CI	2.6–3.2	2.2–2.8	2.6–3.4	2.7–3.9	1.6–2.6	2.8–5.4	2.1–5.6	4.2–15.7	2.7–3.0
AS rate (W)	2.2	1.8	2.3	2.4	1.5	3.1	2.8	6.5	2.1
95% CI	2.0–2.4	1.6–2.1	2.0–2.6	2.0–2.9	1.2–1.9	2.2–4.2	1.7–4.4	3.3–11.2	2.0–2.3
Target age 20–69 years									
AS rate (A)	2.8	2.1	2.9	3.1	1.8	4.4	4.4	6.7	2.7
95% CI	2.5–3.2	1.8–2.5	2.4–3.4	2.4–3.9	1.3–2.5	2.9–6.4	2.5–7.2	3.0–12.4	2.5–2.9
AS rate (W)	2.6	2.0	2.7	2.9	1.7	4.1	4.0	6.1	2.5
95% CI	2.3–3.0	1.6–2.4	2.2–3.2	2.3–3.7	1.2–2.3	2.6–5.9	2.2–6.5	2.8–11.3	2.3–2.7

Notes

1. The age-standardised rates were averaged over 4 years to smooth annual variations that may occur in the smaller states and territories.
2. Deaths were derived by year and state of registration.
3. Rates are expressed per 100,000 women and age-standardised to the Australian 2001 population (A) and the WHO World Standard Population (W).

Source: AIHW Mortality Database.

Table 24: Deaths from cervical cancer by age, states and territories, 2000–2003

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
0–4	0	0	0	0	0	0	0	0	0
5–9	0	0	0	0	0	0	0	0	0
10–14	0	0	0	0	0	0	0	0	0
15–19	0	0	0	0	0	0	0	0	0
20–24	3	0	0	0	0	0	0	0	3
25–29	1	2	2	3	1	1	1	1	12
30–34	10	4	11	10	2	1	2	0	40
35–39	13	12	10	2	3	2	2	1	45
40–44	18	11	16	4	5	2	1	1	58
45–49	26	16	17	9	14	3	1	1	87
50–54	34	16	12	10	10	4	0	3	89
55–59	27	15	14	6	5	4	1	1	73
60–64	36	16	20	8	7	1	1	0	89
65–69	27	15	16	13	8	3	1	1	84
70–74	35	25	23	15	4	4	0	0	106
75–79	31	33	21	10	9	3	3	0	110
80–84	32	23	17	16	6	3	0	1	98
85+	33	24	15	12	12	4	0	0	100
All ages 0–85+ years	326	212	194	118	86	35	13	10	994
Target age 20–69 years	195	107	118	65	55	21	10	9	580

Notes

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

Source: AIHW Mortality Database.

Table 25: Age-specific and age-standardised death rates for cervical cancer by age, states and territories, 2000–2003

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
0–4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5–9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10–14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15–19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20–24	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
25–29	0.1	0.3	0.4	1.1	0.5	1.7	1.9	2.8	0.4
30–34	1.0	0.5	2.0	3.5	0.9	1.5	3.9	0.0	1.3
35–39	1.3	1.6	1.8	0.7	1.3	2.9	3.9	3.1	1.5
40–44	1.8	1.5	2.8	1.3	2.1	2.7	1.9	3.4	1.9
45–49	2.8	2.4	3.3	3.2	6.4	4.4	2.0	3.8	3.2
50–54	4.0	2.5	2.5	3.9	4.7	6.2	0.0	13.7	3.5
55–59	3.9	2.9	3.5	3.1	2.9	7.4	3.0	7.0	3.5
60–64	6.4	3.8	6.6	5.2	5.1	2.2	4.4	0.0	5.4
65–69	5.5	4.1	6.5	10.2	6.6	8.0	5.7	18.8	5.9
70–74	7.4	7.3	10.1	13.2	3.3	11.4	0.0	0.0	8.0
75–75	7.4	10.8	10.6	10.4	8.1	9.7	22.4	0.0	9.4
80–84	10.9	10.9	12.1	23.8	7.6	13.3	0.0	60.6	11.9
85+	12.6	12.3	12.2	18.7	16.7	20.1	0.0	0.0	13.4
All ages 0–85+ years									
AS rate (A)	2.3	2.0	2.6	3.1	2.4	3.3	2.2	3.9	2.4
95% CI	2.0–2.5	1.7–2.3	2.2–3.0	2.6–3.7	1.9–3.0	2.3–4.6	1.1–3.7	1.5–7.8	2.2–2.5
AS rate (W)	1.7	1.5	2.0	2.3	1.9	2.5	1.8	3.1	1.8
95% CI	1.5–1.9	1.3–1.7	1.7–2.3	1.9–2.8	1.5–2.3	1.7–3.6	0.9–3.1	1.3–5.8	1.7–1.9
Target age 20–69 years									
AS rate (A)	2.3	1.7	2.5	2.7	2.7	3.4	2.5	4.6	2.3
95% CI	2.0–2.7	1.4–2.1	2.1–3.0	2.1–3.5	2.1–3.6	2.1–5.2	1.2–4.6	1.9–9.0	2.1–2.5
AS rate (W)	2.1	1.6	2.4	2.5	2.5	3.1	2.4	4.2	2.1
95% CI	1.8–2.5	1.3–1.9	2.0–2.8	2.0–3.2	1.9–3.3	1.9–4.8	1.1–4.4	1.8–8.2	2.0–2.3

Notes

1. The age-standardised rates were averaged over 4 years to smooth annual variations that may occur in the smaller states and territories.
2. Deaths were derived by year and state of registration.
3. Rates are expressed per 100,000 women and age-standardised to the Australian 2001 population (A) and the WHO World Standard Population (W).

Source: AIHW Mortality Database.

Indicator 6.2: Mortality by location

Table 26: Deaths from cervical cancer by age and location, 1996–1999 and 2000–2003

Age group	Major cities		Regional		Remote	
	1996–1999	2000–2003	1996–1999	2000–2003	1996–1999	2000–2003
0–4	0	0	0	0	0	0
5–9	0	0	0	0	0	0
10–14	0	0	0	0	0	0
15–19	0	0	0	0	0	0
20–24	3	1	2	2	0	0
25–29	6	6	4	5	0	1
30–34	20	29	10	7	1	4
35–39	36	27	26	18	2	0
40–44	43	31	26	22	3	5
45–49	62	59	30	26	5	0
50–54	47	58	24	29	1	1
55–59	45	44	26	27	3	1
60–64	52	48	29	39	4	1
65–69	66	52	29	30	5	2
70–74	89	62	41	40	5	2
75–79	76	72	44	33	2	4
80–84	63	65	28	31	2	2
85+	74	68	30	30	1	2
All ages						
0–85+ years	684	622	348	340	36	26
Target age						
20–69 years	382	355	206	206	25	15

Notes

1. Deaths were derived from place of usual residence and by year of registration.
2. The number of deaths is presented as 4-year rolling blocks of data.
3. There were 6 deaths excluded from these data because the respective postcodes were not able to be matched to the coding used for this analysis.

Source: AIHW Mortality Database.

Table 27: Age-specific and age-standardised death rates for cervical cancer by age and location, 1996–1999 and 2000–2003

Age group	Major cities		Regional		Remote	
	1996–1999	2000–2003	1996–1999	2000–2003	1996–1999	2000–2003
0–4	0.0	0.0	0.0	0.0	0.0	0.0
5–9	0.0	0.0	0.0	0.0	0.0	0.0
10–14	0.0	0.0	0.0	0.0	0.0	0.0
15–19	0.0	0.0	0.0	0.0	0.0	0.0
20–24	0.2	0.0	0.3	0.4	0.0	0.0
25–29	0.3	0.3	0.5	0.7	0.5	1.2
30–34	1.0	1.4	1.2	0.8	1.6	4.6
35–39	1.8	1.3	2.8	2.0	2.5	0.3
40–44	2.3	1.6	3.0	2.3	5.0	6.3
45–49	3.6	3.2	3.8	3.0	8.9	0.6
50–54	3.2	3.3	3.6	3.6	2.3	2.3
55–59	4.0	3.3	4.7	4.0	8.6	3.2
60–64	5.4	4.5	5.8	6.9	14.9	2.9
65–69	7.2	5.7	6.2	6.2	20.2	8.4
70–74	10.2	7.1	9.6	9.0	29.6	9.5
75–75	10.7	9.2	13.4	8.8	16.1	29.1
80–84	12.9	11.7	12.3	11.7	23.6	25.4
85+	17.8	13.5	15.7	12.9	18.3	23.0
All ages 0–85+ years						
AS rate (A)	2.7	2.2	2.9	2.6	5.3	3.6
95% CI	2.5–2.9	2.1–2.4	2.6–3.2	2.3–2.8	3.7–7.4	2.3–5.2
AS rate (W)	2.0	1.7	2.2	2.0	4.1	2.6
95% CI	1.9–2.2	1.5–1.8	2.0–2.5	1.8–2.2	2.8–5.7	1.7–3.8
Target age 20–69 years						
AS rate (A)	2.5	2.2	2.8	2.6	5.2	2.7
95% CI	2.3–2.8	1.9–2.4	2.5–3.2	2.2–3.0	3.2–7.6	1.5–4.4
AS rate (W)	2.3	2.0	2.6	2.4	4.8	2.6
95% CI	2.1–2.6	1.8–2.2	2.3–3.0	2.1–2.8	3.0–7.0	1.4–4.2

Notes

1. The age-standardised rates are presented as 4-year rolling blocks of data.
2. Deaths were derived from place of usual residence and by year of registration.
3. Rates are expressed per 100,000 women and age-standardised to the Australian 2001 population (A) and the WHO World Standard Population (W).

Source: AIHW Mortality Database.

Indicator 6.3: Mortality by Indigenous status

Table 28: Number of deaths and age-specific and age-standardised death rates for cervical cancer by age and Indigenous status, Queensland, South Australia, Western Australia and Northern Territory, 2000–2003

Age group	Indigenous		Other Australians	
	Number	Rate	Number	Rate
0–4	0	0.0	0	0.0
5–9	0	0.0	0	0.0
10–14	0	0.0	0	0.0
15–19	0	0.0	0	0.0
20–24	0	0.0	0	0.0
25–29	0	0.0	7	0.7
30–34	4	8.8	19	1.8
35–39	0	0.0	16	1.5
40–44	6	18.8	20	1.8
45–49	6	24.0	35	3.4
50–54	3	15.6	32	3.4
55–59	1	7.6	25	3.3
60–64	2	19.9	33	5.5
65–69	3	43.7	35	7.1
70–74	4	86.3	38	8.2
75+	3	48.4	116	12.2
All ages				
0–85+ years	32		376	
AS rate (A)		13.2		2.5
95% CI		8.4–19.5		2.3–2.8
AS rate (W)		10.0		1.9
95% CI		6.6–14.3		1.7–2.1
Target age				
20–69 years	25		222	
AS rate (A)		12.0		2.5
95% CI		7.5–18.0		2.1–2.8
AS rate (W)		10.9		2.3
95% CI		6.9–16.4		2.0–2.6

Notes

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

Source: AIHW Mortality Database.

Appendixes

Appendix A: Cervical cancer—symptoms, detection and treatment

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

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

The Pap smear is the most common way to detect pre-cancerous changes which rarely cause any symptoms. The test involves a doctor or nurse practitioner 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 provided by general practitioners, gynaecologists, women's health nurses and, in some locations, Indigenous women's health workers.

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

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

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

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

Appendix B: Data sources and limitations

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

Table B1: Cervical cancer screening indicators data sources

Indicator	Description	Data source
1	Participation rate for cervical cancer screening	National Cervical Screening Program
2	Early re-screening	National Cervical Screening Program
3	Low-grade abnormality detection	National Cervical Screening Program
4	High-grade abnormality detection	National Cervical Screening Program
5.1	Incidence of micro-invasive cervical cancer National Cancer Statistics Clearing House (ICD10 C53)	National Cancer Statistics Clearing House
5.2	Incidence of squamous, adenocarcinoma, adenosquamous and other cervical cancer (ICD10 C53)	National Cancer Statistics Clearing House
5.3	Incidence by location (ICD10 C53)	National Cancer Statistics Clearing House
6.1	Mortality from cervical cancer (ICD9 180 for data up to and including 1996; ICD10 C53 for data from 1997 onwards)	AIHW Mortality Database
6.2	Mortality by location	AIHW Mortality Database
6.3	Mortality by Indigenous status	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 2001 and 2002 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 2001 National Health Survey, and are tabulated in Appendix D.

The age-standardised rates in this publication are calculated using the total estimated 2001 mid-year Australian resident population. Where appropriate, rates are also standardised to the WHO World Standard Population for international comparison. Both the Australian Standard Population and the WHO World Standard Population are in Appendix D.

Indigenous mortality data

Due to the difficulties of Indigenous identification, mortality data used in Indicator 10 are based on deaths in Queensland (for 1998, 1999, 2000, 20001 and 2002), Western Australia, South Australia and the Northern Territory only.

Other data limitations

- Hysterectomy fractions are calculated from national data derived from the ABS National Health Survey using aggregate data that does not necessarily reflect variation at the state or territory level. In this report, data from the 2001 National Health Survey have been used.
- Participation rates will be underestimates to the extent that a small percentage of women choose to opt-off local registers and have been excluded from the statistics in this report.
- The participation numbers for states and territories other than Victoria and the Australian Capital Territory and the Australian totals may be overestimated because of double counting of some women in registers. This may be the result of difficulty in identifying state or territory of residence for women in border areas and the inclusion in registers of women resident overseas.
- Participation rates published by state and territory programs may differ from those in this publication because of variation in denominators used.
- Rates for all ages in incidence and mortality sections are based on data for women aged 15 years and over. This may have the impact of making incidence and mortality estimates for the same year incompatible between publications.

Appendix C: Methods

This appendix describes the methods used to calculate the estimates presented in the tables in the body of this publication.

Crude rates

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

Age-specific rates

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

$$\begin{aligned} \text{Age-specific} \\ \text{cervical cancer} \\ \text{incidence rate in} \\ \text{females aged 50-54} \\ \text{in the year 2000} &= \frac{\text{New cases aged 50 – 54 years (year 2001)}}{2001 \text{ female population aged 50 – 54 years}} \times 100,000 \\ &= \frac{78}{648,237} \times 100,000 \\ &= 12.0 \text{ per } 100,000 \end{aligned}$$

Age-standardised rates (AS rate)

Rates are adjusted for age to facilitate comparisons between populations that have different age structures, e.g. between youthful and ageing communities. There are two different methods commonly used to adjust for age. In this publication we use direct standardisation in which age-specific rates are multiplied by a constant population (the Australian 2001 Standard Population unless otherwise specified). This effectively removes the influence of age structure on the summary rate that is described as the age-standardised rate. The method may be used for the calculation of participation, incidence and mortality rates. The method used for this calculation comprises three steps:

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

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

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

Confidence intervals

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

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

The 95% confidence intervals in this report were calculated using a method for obtaining approximate confidence intervals for a weighted sum of Poisson parameters developed by Dobson et al. (1991).

Appendix D: Population data

Table D1: Australian Standard Population^(a) and WHO World Standard Population^(b)

Age group	World Standard Population	Australian 2001 Standard Population
0–4	8.86	1,282,357
5–9	8.69	1,351,664
10–14	8.60	1,353,177
15–19	8.47	1,352,745
20–24	8.22	1,302,412
25–29	7.93	1,407,081
30–34	7.61	1,466,615
35–39	7.15	1,492,204
40–44	6.59	1,479,257
45–49	6.04	1,358,594
50–54	5.37	1,300,777
55–59	4.55	1,008,799
60–64	3.72	822,024
65–69	2.96	682,513
70–74	2.21	638,380
75–79	1.52	519,356
80–84	0.91	330,050
85+	0.63	265,235
Total	100.03	19,413,240

Sources

(a) ABS (2002).

(b) Ahmad et al. 2002.

Table D2: Hysterectomy fractions for women aged 15–80+ years, Australia, 2001

Age group	% of women who have not had a hysterectomy
18–19	100.0
20–24	100.0
25–29	100.0
30–34	98.9
35–39	95.6
40–44	90.6
45–49	82.5
50–54	76.5
55–59	66.2
60–64	68.9
65–69	66.8
70–74	68.1
75–79	67.9
80+	69.0
Total	85.5

Source: ABS 2001 National Health Survey.

Table D3: Estimated resident female population, states and territories, June 2000

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
0-4	212,248	150,048	119,160	61,978	45,470	15,236	10,327	8,521	623,100
5-9	220,812	159,285	126,800	65,717	48,675	16,633	10,858	8,396	657,321
10-14	217,827	157,685	124,667	67,662	49,127	16,792	11,001	7,584	652,475
15-19	214,103	157,159	126,223	66,450	49,724	16,702	11,844	7,147	649,402
20-24	211,077	158,650	121,765	63,301	46,456	14,071	12,778	7,714	635,881
25-29	247,422	184,117	135,753	69,930	51,486	15,541	13,323	9,359	727,009
30-34	240,000	185,289	131,615	70,453	53,291	16,169	12,582	8,816	718,323
35-39	255,711	188,110	140,417	74,799	57,901	18,242	12,852	8,251	756,421
40-44	244,599	180,407	134,766	73,321	57,577	18,175	12,722	7,226	728,900
45-49	224,723	166,671	124,670	68,226	54,103	16,897	12,337	6,405	674,128
50-54	207,920	154,790	116,441	60,200	51,550	15,772	11,315	5,088	623,134
55-59	161,449	117,249	88,394	44,223	39,070	12,350	7,449	3,255	473,483
60-64	137,200	100,964	70,601	36,564	33,626	10,633	5,336	1,900	396,853
65-69	121,266	89,014	59,494	30,663	30,036	9,263	4,102	1,235	345,081
70-74	118,405	86,798	56,363	28,027	30,669	8,777	3,742	853	333,643
75-79	102,665	74,696	48,012	23,354	27,472	7,758	3,225	560	287,744
80-84	68,156	48,613	32,106	15,366	18,064	5,345	1,975	369	190,000
85+	61,529	46,288	28,770	15,009	16,988	4,673	1,607	286	175,151
Total	3,267,112	2,405,833	1,786,017	935,243	761,285	239,029	159,375	92,965	9,648,049

Source: AIHW Population Database based on estimated resident population data compiled by ABS (data extracted March 2005).

Table D4: Estimated resident female population, states and territories, June 2001

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
0–4	213,086	150,321	120,456	61,905	44,962	15,150	10,272	8,594	624,858
5–9	220,990	159,060	127,970	65,655	48,495	16,360	10,824	8,379	657,874
10–14	220,821	159,577	127,233	68,044	48,716	16,771	11,073	7,723	660,094
15–19	218,197	160,653	128,582	68,177	50,536	16,636	12,060	7,173	662,077
20–24	212,719	160,769	123,091	63,913	46,344	13,999	13,122	7,616	641,636
25–29	241,462	178,268	132,503	67,908	49,170	14,721	13,030	9,029	706,171
30–34	248,361	191,148	136,310	72,069	53,575	16,257	12,838	9,047	739,696
35–39	253,112	187,977	139,855	74,293	56,832	17,524	12,849	8,204	750,770
40–44	250,299	184,241	138,896	74,398	58,196	18,437	12,815	7,428	744,821
45–49	227,525	168,515	127,283	69,797	54,391	17,073	12,302	6,543	683,539
50–54	215,107	160,647	121,798	63,711	53,246	16,338	11,817	5,513	648,237
55–59	168,272	122,587	93,692	46,062	41,110	12,818	7,906	3,418	495,911
60–64	140,535	102,654	74,133	37,870	34,124	10,988	5,594	2,111	408,042
65–69	121,568	89,321	60,179	31,244	29,788	9,248	4,265	1,290	346,923
70–74	118,705	86,795	57,118	28,484	30,325	8,740	3,731	918	334,826
75–79	103,805	75,974	48,959	23,787	27,745	7,819	3,320	588	292,000
80–84	72,230	51,628	34,293	16,288	19,239	5,547	2,159	412	201,800
85+	64,220	48,296	30,155	15,998	17,672	4,899	1,765	307	183,313
Total	3,311,014	2,438,431	1,822,506	949,603	764,466	239,325	161,742	94,293	9,782,588

Source: AIHW Population Database based on estimated resident population data compiled by ABS (data extracted March 2005).

Table D5: Estimated resident female population, states and territories, June 2002

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
0-4	209,998	149,393	120,635	61,267	44,412	14,878	10,193	8,471	619,365
5-9	219,545	158,360	128,718	65,354	47,919	16,064	10,602	8,240	654,942
10-14	222,365	160,854	130,986	68,209	48,895	16,673	11,090	7,690	666,903
15-19	219,024	160,582	129,704	68,547	50,462	16,639	11,914	7,129	664,072
20-24	215,476	164,600	125,384	65,016	47,029	14,105	13,331	7,456	652,455
25-29	235,186	173,789	129,576	66,068	47,466	13,970	12,776	8,558	687,472
30-34	254,762	195,255	140,697	73,271	53,979	16,314	13,161	9,154	756,676
35-39	248,713	186,794	139,540	73,748	55,450	16,992	12,540	8,060	741,963
40-44	255,317	187,635	143,484	75,781	58,882	18,600	12,938	7,521	760,266
45-49	230,346	171,093	130,107	70,701	54,719	17,258	12,223	6,522	693,084
50-54	215,417	160,557	123,151	64,600	52,781	16,242	11,745	5,655	650,212
55-59	180,476	131,947	102,248	50,183	44,420	13,861	8,727	3,635	535,541
60-64	143,193	105,156	77,891	39,445	34,713	11,236	5,845	2,325	419,844
65-69	123,633	91,020	62,742	32,380	30,288	9,446	4,447	1,366	355,344
70-74	117,855	85,628	57,482	28,694	29,724	8,816	3,725	978	332,914
75-79	104,309	76,984	49,611	24,224	27,842	7,709	3,401	632	294,715
80-84	75,377	54,172	36,110	17,269	20,125	5,744	2,266	422	211,487
85+	67,203	49,844	31,552	16,378	18,279	5,118	1,891	324	190,591
Total	3,338,195	2,463,663	1,859,618	961,135	767,385	239,665	162,815	94,138	9,887,846

Source: AIHW Population Database based on estimated resident population data compiled by ABS (data extracted March 2005).

Table D6: Estimated resident female population, states and territories, June 2003

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
0–4	207,840	148,831	121,115	60,967	43,903	14,922	10,125	8,487	616,337
5–9	217,222	157,203	129,778	64,853	47,351	15,733	10,453	8,065	650,780
10–14	223,122	161,896	134,140	68,675	49,096	16,721	10,871	7,745	672,422
15–19	218,754	161,148	130,588	69,025	50,340	16,689	11,865	7,059	665,547
20–24	219,341	168,347	130,226	66,564	47,970	14,287	13,575	7,271	667,642
25–29	230,834	171,726	129,302	65,248	46,283	13,568	12,654	8,277	677,970
30–34	258,371	196,664	145,100	73,716	53,573	16,393	13,163	9,120	766,190
35–39	244,128	186,431	139,805	73,087	54,536	16,690	12,423	7,840	735,055
40–44	257,199	189,969	147,524	77,038	59,090	18,820	12,884	7,553	770,184
45–49	234,453	173,918	134,218	71,733	55,317	17,568	12,255	6,632	706,208
50–54	216,899	161,952	125,720	65,873	53,002	16,594	11,687	5,716	657,524
55–59	190,744	140,572	110,262	53,925	47,162	14,795	9,351	3,931	570,788
60–64	145,895	106,921	81,802	40,634	35,363	11,599	6,096	2,482	430,831
65–69	126,526	93,245	65,471	33,713	30,977	9,703	4,661	1,426	365,745
70–74	116,043	84,892	57,471	28,824	29,040	8,755	3,725	978	329,740
75–79	105,559	77,630	50,718	24,825	27,852	7,760	3,424	679	298,451
80–84	78,343	57,000	37,770	18,292	21,052	5,963	2,428	446	221,296
85+	69,395	51,015	32,887	16,706	18,913	5,247	1,979	344	196,489
Total	3,360,668	2,489,360	1,903,897	973,698	770,820	241,807	163,619	94,051	9,999,199

Source: AIHW Population Database based on estimated resident population data compiled by ABS (data extracted March 2005).

Table D7: Estimated resident female population, by age and location, for the 4-year periods 1996–1999 and 2000–2003

Age group	Major cities		Regional		Remote	
	1996–1999	2000–2003	1996–1999	2000–2003	1996–1999	2000–2003
0–4	1,600,570	1,606,087	824,918	793,326	89,390	84,247
5–9	1,606,581	1,649,313	885,651	884,749	89,223	86,855
10–14	1,596,985	1,658,368	893,325	916,183	77,281	77,343
15–19	1,678,788	1,753,798	775,110	827,419	57,360	59,881
20–24	1,922,307	1,895,396	661,594	640,676	67,481	61,541
25–29	2,055,676	2,010,103	759,837	711,458	84,078	77,061
30–34	1,955,620	2,077,219	822,632	822,289	81,993	81,376
35–39	1,974,730	2,009,408	927,544	897,512	80,042	77,290
40–44	1,849,136	1,987,819	871,176	944,486	66,886	71,866
45–49	1,751,752	1,833,881	791,804	861,567	57,652	61,511
50–54	1,476,475	1,721,713	680,898	802,645	47,727	54,749
55–59	1,118,638	1,353,429	560,272	679,897	35,920	42,397
60–64	953,963	1,056,965	495,444	567,183	27,575	31,422
65–69	912,717	905,959	466,860	483,282	22,551	23,852
70–74	879,096	868,785	423,677	443,404	17,275	18,934
75–75	707,131	783,671	329,975	375,007	12,828	14,232
80–84	486,345	553,842	226,538	260,965	8,692	9,776
85+	417,569	504,233	188,248	232,742	7,990	8,570
Total	24,944,079	26,229,990	11,585,503	12,144,790	931,946	942,901

Source: AIHW Population Database based on estimated resident population data compiled by ABS (data extracted March 2005).

Table D8: Estimated resident Indigenous and other Australian female populations for Queensland, Western Australia, South Australia and the Northern Territory, for the 4-year period 2000–2003

Age group	Indigenous	Other Australians
0–4	70,550	869,753
5–9	70,770	929,595
10–14	65,439	950,753
15–19	56,374	960,492
20–24	48,140	928,976
25–29	47,744	978,172
30–34	45,516	1,048,270
35–39	38,926	1,073,692
40–44	31,897	1,096,784
45–49	24,960	1,016,407
50–54	19,193	954,852
55–59	13,097	761,893
60–64	10,072	595,512
65–69	6,860	495,432
70–74	4,634	461,314
75+	6,201	948,850
Total	560,373	14,070,747

Note: Only Queensland, South Australia, Western Australia and the Northern Territory have Indigenous death registration data considered to be of a publishable standard. For the purposes of this publication the Indigenous population used as the denominator in calculating mortality rates is the total of these four jurisdictions only. The other Australian population is the total population of the same jurisdictions minus the Indigenous population.

Source: AIHW Population Database based on estimated resident population data compiled by ABS (data extracted March 2005).

Appendix E: National Cervical Screening Programs contact list

New South Wales

Ms Jayne Ross
Program Manager
NSW Cervical Screening Program
PO Box 533
WENTWORTHVILLE NSW 2145
Phone: +61 2 9845 8046
Fax: +61 2 9845 8047
Email: jayne_ross@wsahs.nsw.gov.au
Home page: www.csp.nsw.gov.au

Victoria

Dr Heather Mitchell
Medical Director
Victorian Cervical Cytology Registry
Email: hmitchel@vcs.org.au

Dr Rosemary Lester
Dept of Human Services
Level 17, 120 Spencer Street
MELBOURNE Vic 3000
Phone: +61 03 9637 4130
Fax: +61 3 9637 4653
Email: rosemary.lester@dhs.vic.gov.au
Home page: www.dhs.vic.org.au

Queensland

Ms Jennifer Muller
Director
Cancer Screening Services
Queensland Health
PO Box 48
BRISBANE Qld 4001
Phone: +61 7 3234 0905
Fax: +61 7 3235 2629
Email: jennifer_muller@health.qld.gov.au

Western Australia

Ms Nerida Steel
Program Manager
Cervical Cancer Prevention Program
1st Floor, Eastpoint Plaza
233 Adelaide Terrace
PERTH WA 6000
Phone: +61 8 9237 6920
Fax: +61 8 9237 6991
Email: nerida.steel@health.wa.gov.au

Tasmania

Ms Gail Raw
Program Manager
Dept of Health & Human Services
GPO Box 125B
HOBART Tas 7001

Mr Paul Chandler
Data Manager
Phone: +61 3 6230 7753
Email: paul.chandler@dchs.tas.gov.au
Home page: www.dchs.tas.gov.au

South Australia

Ms Penny Isofidis
Acting Program Manager
SA Cervical Screening Program
2nd Floor, Norwich Centre
55 King William Road
NORTH ADELAIDE SA 5006
Phone: +61 8 8226 8182
Fax: +61 8 8226 8190
Email: penny.isofidis@health.sa.gov.au

Australian Capital Territory

Ms Helen Sutherland
Program Manager
ACT Health
GPO Box 825
CANBERRA ACT 2601
Phone: +61 2 6205 1540
Fax: +61 2 6205 1394
Email: helen.sutherland@act.gov.au

Mr Peter Couvee
Database Manager/Coordinator
ACT Cervical Cytology Register
ACT Community Health
GPO Box 825
Canberra ACT 2601
Phone: +61 2 6205 1955
Fax: +61 2 6205 5035
Email: peter.couvee@act.gov.au

Northern Territory

Ms Vera McMahon
Program Coordinator
Well Women's Cancer Prevention Program
Territory Health Services
PO Box 40596
CASUARINA NT 0810
Phone: +61 8 8922 6445
Fax: +61 8 8922 5511
Email: vera.mcmahon@nt.gov.au

Mr Guillermo Enciso
Data Manager
Casuarina Health Services Centre
Territory Health Services
PO Box 40596
CASUARINA NT 0810
Phone: +61 8 8922 6441
Fax: +61 8 8922 6447 or 6455
Email: guillermo.enciso@nt.gov.au

Australian Government Department of Health and Ageing

Population Screening Section
Department of Health and Ageing
GPO Box 9848
CANBERRA ACT 2601
Phone: +61 2 6289 8302
Fax: 61 2 6289 4021
Home page: www.cervicalscreen.health.gov.au

Appendix F: NHMRC guidelines for the management of women with screen-detected abnormalities (under review)

This reference sheet is a summary of the NHMRC guidelines (1994) for the management of women with screen-detected abnormalities. It is intended to help medical practitioners take appropriate action on receipt of Pap smear reports.

85

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

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

Management of women with low-grade epithelial abnormalities

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

Observational management

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

Active management

Treatment by an accepted method, either ablative or excisional.

88

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

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

Glossary

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

Adenosquamous: a mix of adenocarcinoma and squamous cells in the same sample.

Adenocarcinoma: a cancer formed from the cells of a gland.

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

AS rate: age-standardised rate

Atypia: the condition of being irregular.

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

Benign: not malignant.

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

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

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

Cone biopsy: biopsy in which an inverted cone of tissue is excised, as from the uterine cervix.

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

Cryosurgery: the destruction of tissue using extreme cold.

Dysplasia: abnormal cell growth.

Endocervical: the inside of the uterine cervix or the mucous membrane lining of the cervix.

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.

Epithelium: the covering of internal and external surfaces of the body, including the lining of vessels and other small cavities. It consists of cells joined by small amounts of cementing substances. It is classified into types on the basis of the number of layers deep and the shape of the superficial cells.

Exfoliate: to break away or remove.

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

Histology: the microscopic study of the minute structure and composition of tissues.

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

Incidence: see *new cancer case*

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

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

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

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

Malignant: abnormal changes consistent with cancer.

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*.

Neoplasia: the process by which tumours are formed.

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).

Pap smear: a test prepared for the study of exfoliated cells from the cervix (refer to Appendix A).

Post-partum: following childbirth.

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

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.

Squamous malignancy: cervical cancer can be derived from several cells types. One of these cell types is the squamous cell and most cervical cancers are derived from this cell type.

Stroma: the supporting framework of an organ.

References

- ABS (Australian Bureau of Statistics) 1993. Estimated resident population by age and sex: Australian states and territories, June 1987 to June 1992. ABS Cat. No. 3201.0. Canberra: ABS.
- ABS (Australian Bureau of Statistics) 1995. National Health Survey: summary of results, Australia. ABS Cat. No. 4364.0. Canberra: ABS.
- ABS (Australian Bureau of Statistics) 1999. Deaths Australia 1998. Cat. No. 3302.0. Canberra: ABS.
- ABS (Australian Bureau of Statistics) 2000. Causes of death 1999. Cat. No. 3303.0. Canberra: ABS.
- ABS (Australian Bureau of Statistics) 2001. Information paper: outcomes of ABS views on remoteness consultation, Australia 2001. Cat. No. 1244.0.00.001. Canberra: ABS.
- ABS (Australian Bureau of Statistics) 2002. Australian demographic statistics, September quarter 2002. Cat. No. 3101.0. Canberra: ABS.
- ABS (Australian Bureau of Statistics) & AIHW (Australian Institute of Health and Welfare) 2005. The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples, 2005. ABS Cat. No. 4704.0. AIHW Cat. No. IHW 14. Canberra: ABS.
- Ahmad OB, Boschi-Pinto C, Lopez AD, Murray CJL, Lozano R & Inoue M 2002. Age standardization of rates: a new WHO standard. GPE Discussion Paper Series No. 31. Geneva: World Health Organization. <www3/whi.int/whosis/discussion_papers/discussion_papers.cfm>
- AIHW (Australian Institute of Health and Welfare) & AACR (Australasian Association of Cancer Registries) 2002. Cancer in Australia 1999. AIHW Cat. No. CAN 15. Canberra: AIHW (Cancer Series No. 20).
- AIHW: Jelfs PL 1995. Cervical cancer in Australia. Canberra: AIHW (Cancer Series No. 3).
- DHSH (Commonwealth Department of Human Services and Health) 1994a. Summary of NHMRC guidelines for the management of women with screen-detected abnormalities. Canberra: AGPS.
- DHSH (Commonwealth Department of Human Services and Health) 1994b. Screening to prevent cervical cancer: guidelines for the management of women with screen detected abnormalities. Canberra: AGPS.
- Dobson A, Kuulasmaa K, Eberle E, & Scherer J 1991. Confidence intervals for weighted sums of Poisson parameters. *Statistics in Medicine* 10:457-62.
- Doll R & Smith PG 1982. Comparison between cancer registries: age-standardised rates. In: Waterhouse J, Shanmugaratnam K, Muir C & Powell J (eds). *Cancer incidence in five continents, Volume IV*. Lyons: International Agency for Research on Cancer.
- DPPIE (Department of Primary Industries and Energy) & DHSH (Department of Human Services and Health) 1994. Rural, remote and metropolitan areas classification. 1991 Census edition. Canberra: AGPS.
- Jensen OM, Parkin DM, Machennan R & Muir C (eds) 1991. *Cancer registration: principles and methods*. Lyons: International Agency for Research on Cancer.

Marcus AC & Crane LA 1998. A review of cervical cancer screening intervention research: implications for public health programs and future research. *Preventive Medicine* 27:13-31.

Ostor AG & Mulvany N 1996. The pathology of cervical neoplasia. *Current Opinion in Obstetrics and Gynecology* 8:69-73.

Snider JA & Beauvais JE 1998. Pap smear utilization in Canada: estimates after adjusting the eligible population for hysterectomy status. *Chronic Diseases in Canada* 19(1):19-24.

Related publications

AHMAC (Australian Health Ministers' Advisory Council) 1991. Cervical Cancer Screening Evaluation Committee. Cervical cancer screening in Australia: options for change. Australian Institute of Health, Prevention Program Evaluation Series, No. 2. Canberra: AGPS.

AHMAC (Australian Health Ministers' Advisory Council) & AIHW (Australian Institute of Health and Welfare) 1997. The Aboriginal and Torres Strait Islander health information plan... This time, let's make it happen. AIHW Cat. No. HWI 12. Canberra: AIHW.

AIHW (Australian Institute of Health and Welfare) 1998. Breast and cervical screening in Australia 1996-1997. AIHW Cat. No. CAN 3. Canberra: AIHW (Cancer Series No. 8).

AIHW (Australian Institute of Health and Welfare) 2000. Breast and cervical screening in Australia 1997-1998. AIHW Cat. No. CAN 9. Canberra: AIHW (Cancer Series No. 14).

Bell J & Ward J 1998. Cervical screening: linking practice, policy and research in women's health. *Cancer Forum* 22(1):6-11.

Colditz GA, Hoaglin DC & Berkey CS 1997. Cancer incidence and mortality: the priority of screening frequency and population coverage. *The Milbank Quarterly* 75(2):147-73.

DHSH (Commonwealth Department of Health and Family Services) 1998. Screening for the prevention of cervical cancer. Canberra: AGPS.

d'Espaignet ET, Measey ML, Condon JR, Jelfs P & Dempsey KE 1996. Cancer in the Northern Territory 1987-1993. Darwin: Territory Health Services.

Hennekens CH & Buring J 1987. *Epidemiology in medicine*. Boston: Little, Brown and Company.

Jelfs P 1998. Using cancer registries to evaluate cancer screening programs. *Cancer Forum* 22(1):3-6.

Kavanagh AM & Broom DH 1997. Women's understanding of abnormal cervical smear test results: a qualitative interview study. *British Medical Journal* 314:1388-91.

Mathers C, Penm R, Sanson-Fisher R, Carter R & Campbell E 1998. Health system costs of cancer in Australia 1993-94. Canberra: Australian Institute of Health and Welfare. Health and Welfare Expenditure Series No. 4.

McInroe WA, McLean MR, Jones RW & Mullins PR 1984. The invasive potential of carcinoma in situ of the cervix. *Obstetric Gynaecology* 64:451-8.

Sigurdsson KS, Adalsteinsson S & Ragnarsson J 1991. Trends in cervical and breast cancer in Iceland: a statistical evaluation of trends in incidence and mortality for the period 1955-1989, their relation to screening and prediction to the year 2000. *International Journal of Cancer* 48:523-8.

Towler BP, Irwig LM & Shelley JM 1993. The adequacy of management of women with CIN 2 and CIN 3 Pap smear abnormalities. *Medical Journal of Australia* 159:523-8.

Wain G, Ward J & Towler BP 1995. Gynaecological care of women with abnormal Pap smears: how varied is current practice? *Medical Journal of Australia* 162:348-53.