National cervical screening monitoring indicators

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

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

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

Indicator 1: Participation rate for cervical screening

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

Indicator 2: Early re-screening

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

Indicator 3: Low-grade abnormality detection

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

Indicator 4: High-grade abnormality detection

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

Indicator 5: Incidence of micro-invasive squamous cell carcinoma

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

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

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

Indicator 7: Mortality

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

Periodic indicators

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

Periodic incidence and mortality indicators by location

Indicator 8: Incidence by location

Incidence rate of cervical cancer per 100,000 estimated resident female population in a 4-year period, by geographic location[1] and 5-year age groups (20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84, 85+) and for the target age group (20–69 years—age-standardised).

Indicator 9: Mortality by location

Death rate from cervical cancer per 100,000 estimated resident female population in a 4-year period, by geographic location[1] and 5-year age groups (20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84, 85+) and for the target age group (20–69 years—age-standardised).

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

[1] See Table A for location classified by RRMA.

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

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

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

Source: DPIE & DHSH 1994.

Indicator 10: Indigenous mortality

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

This indicator examines the patterns of mortality among Indigenous women.

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

Confidence intervals

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

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

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

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

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