National cervical screening monitoring indicators

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

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

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

Indicator 1: Participation rate for cervical screening

Percentage of women screened in a 24-month period by 5-year age groups (20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75-79, 80-84, 85+) and for the target age group (20-69 years).

Indicator 2: Early rescreening

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

Indicator 3: Low-grade abnormality detection

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

Indicator 4: High-grade abnormality detection

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

Indicator 5: Incidence of micro-invasive cervical cancer

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

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

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

Indicator 7: Mortality

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

Periodic indicators

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

Periodic incidence and mortality indicators by location

Indicator 8: Incidence by location

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

Indicator 9: Mortality by location

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

Postcode and statistical local area information for incidence and mortality is routinely collected at the point of diagnosis or death. These data have been classified using the Rural, Remote and Metropolitan Areas classification (RRMA). This classification was developed in 1994 by the then Department of Primary Industries and Energy and the then Department of Human Services and Health as a framework by which various data sources could be analysed for metropolitan,

rural and remote zones. The RRMA groups are classified according to Statistical Local Area based on the Australian Standard Geographical Classification (ASGC) version 2.1 (DPIE & DHSH 1994). Concordance algorithms have been developed to convert statistical local area information coded according to earlier and later ASGC versions into rural, remote and metropolitan area groupings.

Table 2: Structure of the Rural, Remote and Metropolitan Areas classification

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

Source: DPIE & DHSH 1994.

Indicator 10: Indigenous mortality

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

This indicator examines the patterns of mortality among Indigenous women.

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

Confidence intervals

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

For example, the participation rate for Victoria in 1997-1998 was 67.8% with a confidence interval of 67.7% to 68.0%. The corresponding rate for 1998-1999 was 68.9% with a confidence interval of 68.8% to 69.0%. These two intervals do not overlap, so the difference between the 1997-1998 and 1998-1999 rates is larger than would be expected due to chance alone.

Another example is the comparison between cervical cancer mortality rates for women living in rural and remote areas. In the period 1997-1999 there were 2.4 cervical cancer deaths per 100,000 women living in rural areas. This rate had a confidence interval of 2.0 to 2.9. The corresponding rate for women in remote areas was 4.7 per 100,000 women, with a confidence interval of 2.8 to 7.0. These confidence intervals overlap and so, despite the relatively large difference between the two observed rates, they are still consistent with chance variation. This arises from the fact that remote areas of Australia have small populations, which leads to small numbers of deaths from any specific cause, and these small numbers may fluctuate from year to year. This in turn leads to relatively wide confidence intervals for an observed mortality rate.

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