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Summary

Cancer screening involves testing for signs of cancer or precancerous conditions in people without obvious symptoms. The National Cervical Screening Program (NCSP) is one of Australia's three population-based cancer screening programs. It aims to reduce cervical cancer cases, illness, and deaths by detecting precancerous abnormalities before any potential progression to cervical cancer.

The NCSP is a highly successful public health initiative in Australia, halving cervical cancer incidence and mortality since it was introduced in 1991. This has been achieved through organised, population-based cervical screening to detect precancerous changes, allowing treatment before any progression to cervical cancer, thereby preventing this disease.

A renewed NCSP was introduced on 1 December 2017 that included a change from 2-yearly Pap tests for the target age group 20–69 to 5-yearly human papillomavirus (HPV) tests, followed by a liquid-based cytology (LBC) test if oncogenic (cancer-causing) HPV is found, for the target age group 25–74.

This is the fifth report to present data for the renewed NCSP. Data included in this report are for the calendar years 2018, 2019, 2020, 2021, and 2022.

Terminology

This report uses the terms 'participants' and 'invitees' when referring to data collected under the NCSP. These data are not restricted by sex or gender, with all cervical screening participants and invitees included in these data. For NCSP data, participants and invitees may include women, transgender men, intersex people, and non-binary people.

This report uses the term 'women' to mean 'female' when referring to cancer incidence data and cancer mortality data as these data sources are based on sex assigned at birth. However, it should be noted that some people may not identify with this term.

Recruitment

Participation and coverage in the renewed NCSP can now be measured as 5 years of data are available. Participation is restricted to only screening HPV tests, whereas coverage is not restricted in this way, and is a better indication of overall participation in cervical screening.

Over the 5 years 2018–2022, more than 4.7 million participants aged 25–74 had a screening HPV test (primary screening or follow-up HPV test). Participation has been determined to be 68% of the eligible population.

Over the 5 years 2018–2022, more than 5.2 million participants aged 25–74 had an HPV or LBC test for any reason. Coverage has been determined to be 77% of the eligible population.

Screening

Screening HPV test positivity is the proportion of valid primary screening HPV tests that detected oncogenic HPV. In 2022, for participants aged 25–74, positivity was:

- 2% for oncogenic HPV 16 and 18 (the two types of HPV that cause most cervical cancers)
- 8% for oncogenic HPV other than 16 and 18
- 10% for any oncogenic HPV type.

Assessment

Participants considered at higher risk of a significant cervical abnormality are referred for colposcopy, which is the examination of the cervix using a magnifying instrument called a colposcope and is the first step in assessment.

In 2021, of the participants aged 25–74 at higher risk of a significant cervical abnormality, 63% had a colposcopy within 3 months. Median time to colposcopy was 56 days.

Diagnosis

Detection of high-grade abnormalities provides an opportunity for treatment before possible progression to cervical cancer.

In 2022, for every 1,000 participants screened, 14 had a high-grade abnormality detected by histology. In contrast, for every 1,000 participants screened, 1 had a cervical cancer detected. This reflects that the aim of cervical screening is not to detect cervical cancer, but to prevent it through the detection of high-grade abnormalities.

Outcomes

In 2019, 869 women aged 25–74 were diagnosed with cervical cancer, which is 11 new cases per 100,000 women in the population.

In 2021, 179 women aged 25–74 died from cervical cancer, which is 2 deaths per 100,000 women in the population.

Aboriginal and Torres Strait Islander participants

Cervical screening outcomes are reported for Aboriginal and Torres Strait Islander participants for HPV screening test positivity, colposcopy rate, and high-grade cervical abnormality detection rate at the national level for the first time in this report.

In 2022, for Aboriginal and Torres Strait Islander participants aged 25–74, positivity was:

- 2% for oncogenic HPV 16 and 18 (the two types of HPV that cause most cervical cancers)
- 12% for oncogenic HPV other than 16 and 18
- 14% for any oncogenic HPV type.

In 2021, of the Aboriginal and Torres Strait Islander participants aged 25–74 at higher risk of a significant cervical abnormality, 51% had a colposcopy within 3 months.

In 2022, for every 1,000 Aboriginal and Torres Strait Islander participants aged 25–74 screened, 20 had a high-grade cervical abnormality detected by histology, providing an opportunity for treatment prior to any possible progression to cervical cancer.

In 2015–2019, 167 Aboriginal and Torres Strait Islander women aged 25–74 were diagnosed with cervical cancer. After adjusting for age, incidence among Aboriginal and Torres Strait Islander women was 2.1 times the rate of non-Indigenous women.

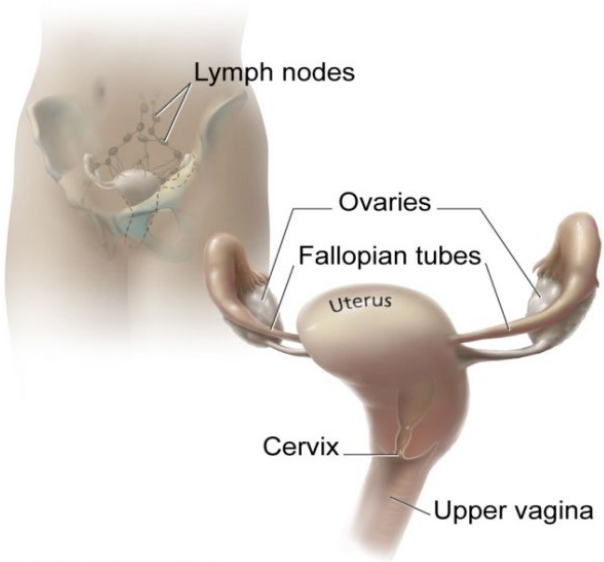
In 2017–2021, 58 Aboriginal and Torres Strait Islander women aged 25–74 died from cervical cancer. After adjusting for age, mortality among Aboriginal and Torres Strait Islander women was 3.5 times the rate of non-Indigenous women.

1 Prevention of cervical cancer through organised cervical screening

Cancer is a group of several hundred diseases in which abnormal cells are not destroyed naturally by the body, but instead multiply and spread out of control. Cancers are distinguished from each other by the specific type of cell involved and by the place in the body in which the disease began.

Cervical cancer affects the cells of the uterine cervix, which is the lower part (or 'neck') of the uterus where it joins the upper end of the vagina (Figure 1.1). Cervical cancer develops when abnormal cells in the lining of the cervix begin to multiply out of control and form precancerous abnormalities. If undetected, these abnormalities can develop into cervical cancer and spread into the surrounding tissue.

Figure 1.1: Anatomy of the cervix and nearby organs



Worldwide, cervical cancer is the fourth most common cancer affecting women, ranking fourth for both incidence and mortality; however, its burden is not equal globally. Cervical cancer ranks second in incidence and mortality behind breast cancer in lower Human Development Index countries without cervical screening programs. Cervical cancer incidence is above 25 new cases per 100,000 women in some such countries, compared with a relatively low incidence of 6 new cases per 100,000 women of all ages in Australia (world age-standardised rates) (Bray et al. 2018). This is due to Australia having an organised population-based screening program in place since 1991 that has prevented many cervical cancers by detecting and treating high-grade cervical abnormalities before any possible progression to cervical cancer.

Research performed by the Australian Institute of Health and Welfare (AIHW) using linked cervical screening, cancer, and death data showed that 72% of cervical cancers diagnosed

between 2002 and 2012 in women aged 20–69 occurred in those who had either never screened or were lapsed screeners, demonstrating the effectiveness of Australia's cervical screening program in preventing cervical cancer. This research further showed that cervical cancers that did occur in recently screened women were less likely to cause death than those diagnosed in women who had never screened, which is likely due to these cancers being detected at an earlier stage (AIHW 2019).

Human papillomavirus (HPV) plays a major role in the development of precancerous cervical abnormalities and cervical cancer, with HPV being the underlying cause of almost 100% of squamous cell carcinomas and up to 90% of adenocarcinomas (Brotherton et al. 2020) (see Box 1.1 for further information).

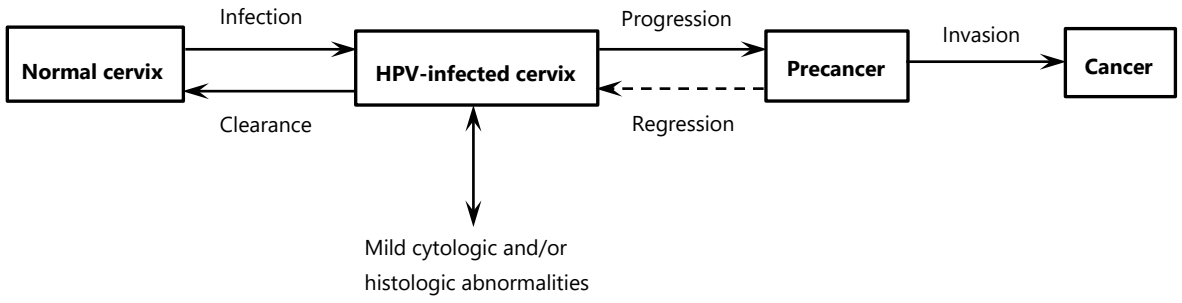
The 4 major steps in most cervical cancer development are:

1. infection with HPV (acquired through sexual contact);
2. viral persistence (as most HPV infections clear with no treatment);
3. progression to precancerous abnormalities (many of which will also regress with no treatment); and
4. invasive cervical cancer (Schiffman et al. 2007; Schiffman and Kjaer 2003) (Figure 1.2).

As indicated by the arrows in Figure 1.2, the preliminary steps towards the eventual development of cervical cancer are not unidirectional. Most HPV-infected cells return to normal, and a large proportion of precancerous abnormalities do not progress to cervical cancer, even without treatment. However, it is not possible to know which precancerous abnormalities will regress without treatment, and so the detection and treatment of all precancerous abnormalities is important.

While the cell changes caused by persistent infection with oncogenic HPV can cause precancerous changes to the cervix, a range of other factors will influence whether precancerous changes will progress to cervical cancer; these include smoking, multiparity (specifically, more than 5 full-term pregnancies), a young age at first full term pregnancy, oral contraceptive use, and immunosuppression (Cancer Council Australia 2014).

Figure 1.2: Role of HPV infection in the development of cervical cancer



Source: Reproduced with permission from M Schiffman, National Cancer Institute (Schiffman and Kjaer 2003).

Australia is set to become the first country in the world to actively eliminate cervical cancer, with modelling predicting that the incidence of cervical cancer will drop to fewer than 4 new cases per 100,000 women by 2035, and to fewer than 1 new case per 100,000 women by 2066 (Hall et al. 2019).

A greater understanding of the role of HPV in most cervical cancers (Box 1.1) has led to two major developments in Australia, which are behind these anticipated further reductions in the incidence of cervical cancer in Australia. The first of these developments is the introduction

of a national HPV vaccination program in April 2007 (described in Box 1.2). The second is a renewed national cervical screening program which commenced on 1 December 2017 and uses an HPV test as its primary screening test (Hall et al. 2019).

Note that, while Australia introduced primary prevention of cervical cancer in the form of HPV vaccination that complements the existing cervical screening program, cervical screening remains a vital secondary prevention strategy for those who are HPV-vaccinated and those who are unvaccinated. It is important that all eligible people participate in cervical screening, irrespective of their HPV vaccination status.

Box 1.1: Proportion of cervical cancers caused by HPV

It was once thought that all cervical cancers were caused by HPV, but it is now recognised that there are some cervical cancers that are not caused by HPV – the majority of these being some histological types of adenocarcinoma (Hodgson and Park 2019; Stolnicu et al. 2018). Current evidence is consistent with HPV being the underlying cause of almost all squamous cell carcinomas and up to 90% of adenocarcinomas (Brotherton et al. 2020).

In Australia, HPV has been detected in 93% of cervical cancers (Brotherton/Tabrizi et al. 2017). However, the proportion of adenocarcinomas that are present will affect the proportion of cervical cancers that are caused by HPV. The success of cervical screening in reducing the incidence of squamous cell carcinomas has seen the proportion of adenocarcinomas increase in Australia from 11% in 1982 to 28% in 2017. The higher proportion of adenocarcinomas, together with the fact that HPV may no longer be detectable in some cervical cancers caused by HPV (due to loss of HPV DNA over time, for example), has contributed to HPV being detected in 93% of cervical cancers in Australia.

In the future, it is likely that the proportion of cervical cancers in which HPV is detected will fall. This would be an indication of a successful cervical screening program, with further reductions in the cervical cancers that are caused by HPV leading to a higher proportion of cervical cancers that are not caused by HPV (Brotherton et al. 2020).

Box 1.2: HPV vaccination in Australia

In April 2007, Australia introduced the National HPV Vaccination Program, which included an ongoing program for girls aged 12–13 and a ‘catch-up’ program for girls and women aged 14–26. This program was extended to boys from February 2013. The HPV vaccine is now administered to girls and boys under the National Immunisation Program.

In 2018, Australia commenced using the nonavalent HPV vaccine Gardasil9, replacing the quadrivalent vaccine Gardasil, protecting against an additional 5 types of HPV.

Gardasil9 protects against types 6, 11, 16, 18, 31, 33, 45, 52 and 58 compared with Gardasil that protected against types 6, 11, 16, and 18.

The Gardasil9 program reduced the number of doses from 3 to 2 (spaced 6–12 months apart). This vaccine will further improve the protection against women developing cervical abnormalities and cervical cancer.

2 National Cervical Screening Program

Cancer screening involves testing for signs of cancer or precancerous conditions in people without obvious symptoms. The National Cervical Screening Program (NCSP) is one of Australia's three population-based cancer screening programs. It aims to reduce cervical cancer cases, illness, and deaths by detecting precancerous abnormalities before any potential progression to cervical cancer.

The NCSP is a highly successful public health initiative in Australia, halving cervical cancer incidence and mortality since it was introduced in 1991. Until December 2017, this was achieved through organised, population-based cervical screening using 2-yearly Pap tests to detect precancerous changes to cervical cells, allowing treatment before any progression to cervical cancer, thereby preventing this disease. Cervical screening using Pap tests was supported by pathology laboratories through the provision of high-quality cervical cytology, and by state and territory cervical cytology registers through appropriate recommendations for clinical management and provision of a safety net for participants.

Improvements in technology, a greater understanding of the role of HPV in the development of cervical cancer, and the introduction of an HPV vaccine that is now administered to girls and boys under the National Immunisation Program, led to the NCSP being reviewed, to ensure that the NCSP continued to provide Australians with safe and effective cervical screening. As a result of this, a 'renewed' NCSP was introduced on 1 December 2017.

The renewed NCSP meant a change from 2-yearly Pap tests for the target age group 20–69 to 5-yearly human papillomavirus (HPV) tests, followed by a liquid-based cytology (LBC) test if oncogenic (cancer-causing) HPV is found, for the target age group 25–74.

Another change is the collection of cervical screening data by the National Cancer Screening Register (NCSR), which is now the source of these data for the NCSP.

2.1 Screening pathway

Box 2.1: Key terminology used in the screening pathway

Significant cervical abnormality: changes to cells in the cervix that have a higher likelihood of progression to cervical cancer, or cervical cancer itself.

Oncogenic: cancer-causing.

Oncogenic HPV types used to be known as 'high-risk HPV types'. Terminology for these HPV types that cause cervical cancer has been changed from 'high-risk' to 'oncogenic' so as to avoid confusion with the risk levels of the cervical screening pathway, in which participants are allocated a risk of significant cervical abnormality of 'low', 'intermediate' or 'higher'.

Genotyping: in the context of cervical screening, this is a process to determine the type of oncogenic HPV detected by an HPV test.

Cytology: in the context of cervical screening, this is the process of examining cells that have been collected from the cervix for abnormalities (usually under a microscope).

A new screening pathway (Figure 2.1) was developed for the renewed NCSP, and was updated on 1 February 2021, based on a participant's risk of significant cervical abnormality. This risk is categorised as 'low risk', 'intermediate risk', or 'higher risk'.

The screening pathway starts with the first step – an HPV test with partial genotyping.

A positive HPV test means that one or more oncogenic types of HPV have been detected. There are 14 oncogenic HPV types: 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66 and 68, with types 16 and 18 causing 70%–80% of cervical cancers in Australia (Brotherton 2008). The HPV test used in cervical screening incorporates partial genotyping of the HPV detected. This means it not only can detect oncogenic HPV, but also can determine whether the oncogenic HPV type detected is 16 or 18, or neither of these.

The 4 possible results of the HPV test are:

- oncogenic HPV not detected
- oncogenic HPV 16/18 detected
- oncogenic HPV (not 16/18) detected
- unsatisfactory HPV test.

The result of the HPV test determines whether cytology is also performed on the sample. This cytology test is called a 'reflex LBC', to reflect that it occurs automatically on the same sample if an HPV test result indicates that it is required. This cytology test is used to provide further information to allow a risk to be allocated. This can be referred to as triage.

- 'Oncogenic HPV not detected' means that the participant is considered **low risk**, and a reflex LBC is not required.
- 'Oncogenic HPV 16/18 detected' means that the participant is considered **higher risk**. A reflex LBC is performed on this sample, but the result does not affect the risk.
- 'Oncogenic HPV (not 16/18) detected' means that a reflex LBC is required to determine the participant's risk.
  - If the reflex LBC result indicates there is a high-grade abnormality present (including cervical cancer or a glandular abnormality), the participant is considered **higher risk**.

    If the reflex LBC result indicates there is either no abnormality present or a low-grade abnormality present, the participant is considered **intermediate risk** and will need to have a follow-up HPV test in 12 months. At their follow-up HPV test:
    - If there is no oncogenic HPV detected, their risk changes to **low risk.**
    - If oncogenic HPV 16/18 is detected or oncogenic HPV not 16/18 is detected with a reflex LBC result of high-grade abnormality (including cervical cancer or a glandular abnormality), their risk changes to **higher risk**.
    - If oncogenic HPV not 16/18 is detected and the reflex LBC result indicates there is either no abnormality present or a low-grade abnormality AND the participant is 2 or more years overdue for screening at the time of the initial screen, an Aboriginal and/or Torres Strait Islander participant, or aged 50+ years, their risk changes to **higher risk.**
    - If oncogenic HPV not 16/18 is detected and the reflex LBC result indicates there is either no abnormality present or a low-grade abnormality, their risk remains as **intermediate risk** and will need to have a further follow-up HPV test in another 12 months. At their second follow-up HPV test:
      - If there is no oncogenic HPV detected, their risk changes to **low risk**.
      - If any oncogenic HPV is detected (oncogenic HPV 16/18 or oncogenic HPV (not 16/18)), their risk changes to **higher risk**.
  - If the reflex LBC is unsatisfactory, a new sample will need to be collected and the LBC test repeated in 6 weeks.
- 'Unsatisfactory HPV test' means that a new sample will need to be collected and tested in 6 weeks. No risk is allocated.

The risk allocated to the participant then determines what recommendation they will receive at the conclusion of the screening episode.

At the completion of a primary screening episode, all participants are allocated a risk of **low risk**, **intermediate risk**, or **higher risk**:

- Participants considered **low risk** are recommended to rescreen in 5 years.
- Participants considered **intermediate risk** are recommended to have a follow-up HPV test in 12 months, after which their risk will be changed to:
  - **low risk** (recommended to rescreen in 5 years)
  - **higher risk** (referred for colposcopy),
  - or their risk will remain as **intermediate risk** (follow-up HPV test in 12 months), after which their risk will be changed to **low risk** or **higher risk**.
- Participants considered **higher risk** are referred for colposcopy.

Self-collected samples in the screening pathway

There are some slight differences in the screening pathway for participants who 'self-collect' a sample for their cervical screening test. Up until 30 June 2022, only those aged 30 or over who had never participated in cervical screening or were 2 or more years overdue for cervical screening, and who declined a practitioner-collected sample, were eligible to self-collect a vaginal sample that is tested for oncogenic HPV.

From 1 July 2022, everyone eligible to participate in cervical screening now have the choice to access self-collection as an alternative to practitioner-collection.

The self-collected vaginal sample is not suitable for reflex LBC.

This is not an issue if the HPV test result is 'Oncogenic HPV not detected' as the participant is considered low risk and recommended to rescreen in 5 years (no reflex LBC performed).

However, if the result is 'Oncogenic HPV (not 16/18) detected', the participant needs to have a separate sample collected by a practitioner for a reflex LBC test to determine their risk.

If the HPV test result is 'Oncogenic HPV 16/18 detected' the participant is considered higher risk and referred for colposcopy as per the standard screening pathway, with the reflex LBC then performed at colposcopy.

Screening pathway used in this report

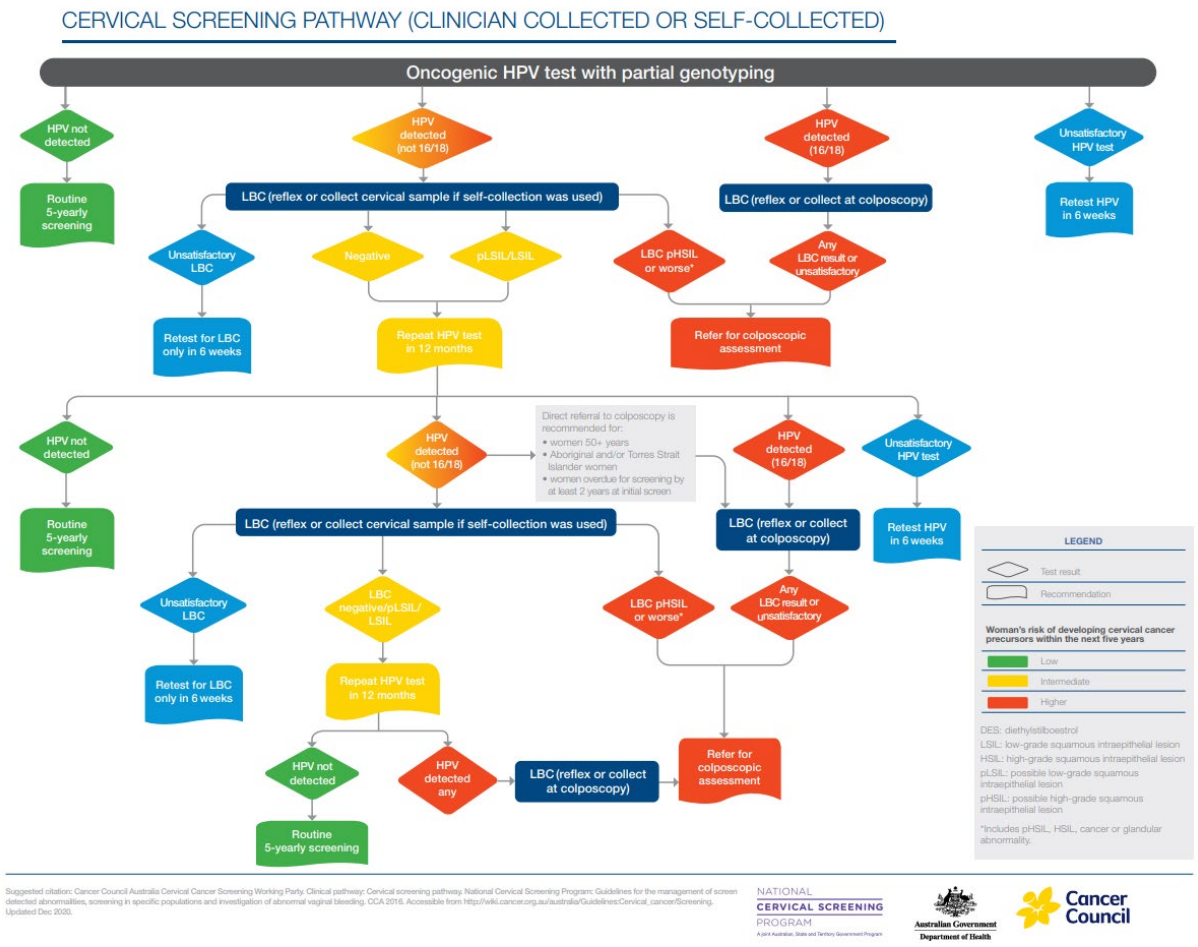
This screening pathway includes changes that came into effect on 1 February 2021.

Prior to 1 February 2021, participants with a cervical screening result of **intermediate risk** were recommended to have a follow-up HPV test at 12 months and be managed as **higher risk** if any oncogenic HPV was detected in this follow-up HPV test and **low risk** if this follow-up HPV test did not detect oncogenic HPV.

Based on a review of program data (Smith 2022), from 1 February 2021, participants with a follow-up HPV test result of HPV (not 16/18) detected and an LBC result that indicates there is either no abnormality present or a low-grade abnormality present, instead remain at **intermediate risk** and undertake a second HPV follow-up test in a further 12 months. The exceptions to this are participants who are 2 or more years overdue for screening at the time of the initial screen, Aboriginal and/or Torres Strait Islander participants, and participants aged 50+ years, who are managed as **higher risk**.

This report uses the current screening pathway for data reported for 2021 and 2022.

Figure 2.1: Cervical screening pathway



Note: The National Cervical Screening Program screening pathway changed for participants at intermediate risk, effective from 1 February 2021.

Prior to 1 February 2021, participants with a cervical screening result of intermediate risk were recommended to have a follow-up HPV test at 12 months and be managed as higher risk if any oncogenic HPV was detected in their follow-up HPV test and low risk if their follow-up HPV test did not detect oncogenic HPV.

From 1 February 2021, participants with a follow-up HPV test result of HPV (not-16/18) detected and an LBC prediction of negative, pLSIL or LSIL instead remain at intermediate risk and undertake a second HPV follow-up test in a further 12 months. The exceptions to this are participants who are 2 or more years overdue for screening at the time of the initial screen, Aboriginal and/or Torres Strait Islander participants, and participants aged 50+ years.

More information is available at https://www.health.gov.au/news/important-changes-to-the-national-cervical-screening-programs-clinical-guidelines-pathway-for-women-at-intermediate-risk

As some data in this report pre-date the change to the screening pathway, this report will use the previous screening pathway for data from 1 January 2018 to 31 January 2021, and the current screening pathway for data from 1 February 2021 to 31 December 2022.

Source: Cancer Council Australia Cervical Cancer Screening Guidelines Working Party. National Cervical Screening Program: Guidelines for the management of screen-detected abnormalities, screening in specific populations and investigation of abnormal vaginal bleeding. Sydney: Cancer Council Australia. [Version URL: https://wiki.cancer.org.au/australiawiki/index.php?oldid=214429, cited 2023 Nov 14]. Available from: https://wiki.cancer.org.au/australia/Guidelines:Cervical_cancer/Screening.

A larger view of the screening pathway is available at https://www.cancer.org.au/assets/pdf/cervical-screening-pathway-flowchart-6.1-July-2022

2.2 Monitoring key aspects of the National Cervical Screening Program

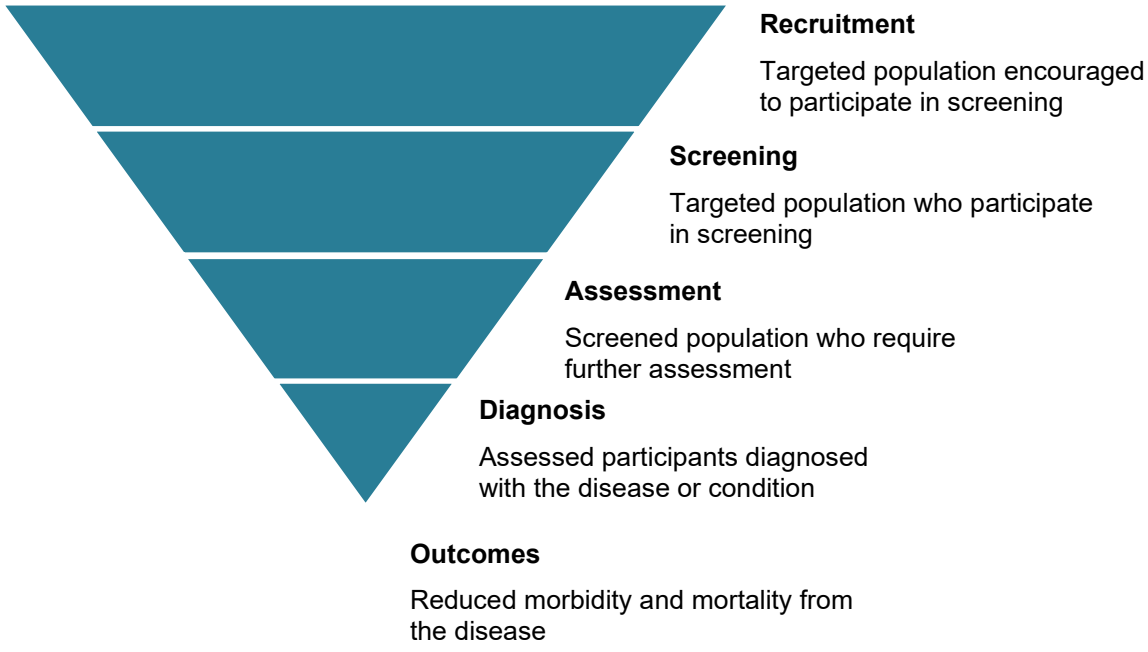
All population-based cancer screening programs require monitoring of their performance, quality, and safety. To facilitate this, the NCSP has performance indicators, quality standards and measures, and safety monitoring protocols. This report presents the latest data for the performance indicators of the NCSP; these measure key aspects of the screening pathway.

These performance indicators are structured within the five incremental stages of a population screening pathway, as described in the Population Based Screening Framework (Standing Committee on Screening 2016). These stages are recruitment, screening, assessment, diagnosis, and outcome. Each incremental stage includes fewer individuals, represented diagrammatically in Figure 2.2 by an inverted triangle.

The largest section (recruitment) represents the target population of the screening program, followed by a smaller screening section, which represents the individuals who participate. The next section (assessment) is smaller again; it represents the subset of screening individuals who have diagnostic assessment, since a screening test is not intended to be diagnostic but rather aims to identify individuals more likely to have the disease and therefore require further investigation from diagnostic tests. A subset of individuals assessed will be found to have the disease, represented by the smallest section of the triangle.

Outcomes sits below the triangle and refers to morbidity and mortality. Screening programs aim to reduce morbidity and mortality.

Figure 2.2: Population screening pathway stages



Throughout the performance indicator section of this report, a small version of this inverted triangle is used as a ‘signpost’ in the top right corner of the page to indicate where in the screening pathway the performance indicator sits.

2.3 National Cervical Screening Program data

The National Cancer Screening Register (NCSR) is the source of cervical screening data for the NCSP in Australia, following the migration and consolidation of state and territory cervical screening register data in 2017. This change may impact comparisons with previous NCSP reporting, which used state and territory cervical screening register data.

The NCSR is intended to be a near-complete record of all cervical tests, including HPV, cytology, colposcopy, and histology. However, while pathology labs and colposcopists are required to notify all cervical test data to the NCSR within 14 days, any tests not notified will not be included in the NCSR, which affects the completeness of the NCSR (and in turn the data in this report). There are also some cervical screening tests performed in Australia that are for Compass participants which are not included in the NCSR (see Box 2.2).

Box 2.2: Compass participants

Compass is a clinical trial comparing 2.5-yearly Pap test screening with 5-yearly HPV screening led by the Australian Centre for the Prevention of Cervical Cancer in collaboration with the Daffodil Centre. More information about the Compass trial can be found here https://www.compasstrial.org.au/. There are over 76,000 participants in the Compass trial.

Cervical tests for Compass participants are not recorded in the NCSR, because, as a clinical trial, notification of Compass data is an exemption under the NCSR Rules 2017. This means that any cervical tests conducted as part of the Compass trial are not included in the NCSR, or in the data in this report. This affects Victoria more than other jurisdictions.

The NCSR is a live database, which means that data are continually updated over time. As such, data extracted at varying times differ, with later data likely to have a greater level of completeness.

NCSR data in this report were sourced from the July 2023 raw data extract (RDE) of version 4.7 of the NCSR (NCSR RDE 4.7 07/07/2023).

Box 2.3: The term ‘participants’ or ‘invitees’ used for NCSR data

This report uses the term ‘participants’ or ‘invitees’ when referring to NCSR data.

In this context, ‘participant’ and ‘invitee’ is defined as any person with a cervix. This may include women, transgender men, intersex people, and non-binary people.

Data on cervical cancer cases and deaths in Australia are sourced from AIHW databases – the Australian Cancer Database and the AIHW National Mortality Database.

Box 2.4: The term ‘women’ used for incidence and mortality data

This report uses the term 'women' to mean ‘female' when referring to incidence and mortality data as these data sources are based on sex assigned at birth. However, it should be noted that some people may not identify with this term.

Population data are used for the calculation of participation, incidence, and mortality, with hysterectomy fractions additionally used for the calculation of participation.

All data sources used in this report are detailed more fully in Appendix C.

2.4 Impact of COVID-19

Coronaviruses are a common form of virus that can cause respiratory diseases that range from the common cold to much more serious illnesses (Department of Health 2020a). These viruses spread from person to person in a number of ways. COVID-19 is a coronavirus disease caused by a new coronavirus called SARS-CoV-2 (short for severe acute respiratory syndrome coronavirus 2) that was first reported to the World Health Organization (WHO) in December 2019 (WHO 2020).

The coronavirus that causes COVID-19 spread quickly after it was first reported and was declared an international pandemic by WHO on 11 March 2020.

The COVID-19 pandemic has affected many areas of people's lives, including their access to and use of health services, such as cancer screening programs. COVID-19 restrictions were introduced in Australia from March 2020. Many health care services suspended or changed the way they delivered their services at this time. Due to this, there was the potential for people to change their behaviour whilst under restrictions, which may have included access to cervical screening.

Earlier reporting in *Cancer screening and COVID-19 in Australia* (AIHW 2020; AIHW 2021), examined the number of screening tests performed in Australia's three national cancer screening programs from January to September 2020 to ascertain the impact of COVID-19 on national population-based cancer screening programs in Australia.

The number of screening tests performed in Australia's three national cancer screening programs was reported every three months to March 2023 in *Cancer screening programs: quarterly data* (AIHW 2023c) to allow further monitoring of these data.

Future work will provide a better understanding of the potential long-term, indirect health effects of the COVID-19 pandemic on cancer screening and outcomes.

There may also be an impact of COVID-19 on the Estimated Resident Populations (ERPs) that are used in this report for participation, incidence, and mortality calculations. This is outlined in more detail in Box 2.5, below.

Box 2.5: Impact of COVID-19 on Estimated Resident Populations.

The COVID-19 pandemic and the resulting Australian Government closure of the international border from 20 March 2020, caused significant disruptions to the usual Australian population trends. This report uses Australian Estimated Resident Population (ERP) estimates that reflect these disruptions.

In the 12-month period July 2020 to June 2021, the overall population growth was much smaller than the years prior, and in particular, there was a relatively large decline in the population of Victoria. ABS reporting indicates these were primarily due to net-negative international migration (ABS 2021).

This change in the usual population trends may complicate interpretation of statistics calculated from these ERPs. For example, rates and proportions may be greater than in previous years due to decreases in the denominator (population) of some sub-populations.

3 Performance indicator monitoring

Performance indicators allow key aspects of the renewed NCSP to be monitored. These are listed in Table 3.1 and follow the screening pathway of the NCSP. Data are reported against performance indicators in the following chapters. The data required to calculate some performance indicators are not yet available, either due to the program being new and so insufficient time has passed to allow the calculation of some performance indicators, and/or because data linkage is required. This is documented in Table 3.1.

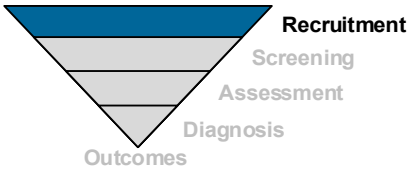
Performance indicators are grouped under each of the 5 population screening pathway stages of 'Recruitment', 'Screening', 'Assessment', 'Diagnosis', and 'Outcomes' (Figure 2.2). Note that in Table 3.1, the screening pathway entries 'Screening', 'Screening HPV test performance', 'Self-collection', and 'Follow-up' all fall within the broader screening pathway stage of 'Screening'.

Table 3.1: Performance indicators for the National Cervical Screening Program

Screening pathway	Performance indicator	Reported
Recruitment	1 Participation	✓
	2 Response to invitation	✓
	3 Rescreening	×
Screening		
Screening	4 Screening results	✓
	5 Correlation of screening results	✓
Screening HPV test performance	6 Screening HPV test positivity	✓
	7 Cervical cancer diagnosed after a low risk screening test result	×
Self-collection	8 LBC test in self-collection participants positive for oncogenic HPV (not 16/18)	✓
	9 Colposcopy in self-collection participants positive for oncogenic HPV 16/18	✓
Follow-up	10 Adherence to recommendation for follow-up	✓
	11 Follow-up results	✓
Assessment	12 Colposcopy rate	✓
	13 Time to colposcopy	✓
	14 Biopsy rate	✓
	15 Yield of high-grade abnormalities on biopsy among participants who attend colposcopy with higher risk screening results	✓
	16 Positive predictive value of colposcopy	✓
Diagnosis	17a High-grade cervical abnormality detection rate	✓
	17b Cervical cancer detection rate	✓
Outcomes	18 Cervical cancers diagnosed by time since last screen	×
	19 Incidence of cervical cancer	✓
	20 Mortality from cervical cancer	✓

✓ = reported; ×* = data not available and not reported.

Note: For all screening pathway groups apart from 'Outcomes', the reported target age group for the performance indicators of 25–74 includes participants aged from 24 years and 9 months. This is because 24 years and 9 months is the age at which those eligible to screen are invited to screen in the renewed NCSP; inclusion of invitees and participants aged 24 years and 9 months ensures they are captured in the data if they screen prior to their 25th birthday.



Recruitment

Performance Indicator 1: Participation

Summary of participation data

- 4,708,848 participants aged 25–74 had a screening HPV test in 2018–2022. This equates to participation of 68.4% of the target population.
- 5,274,192 participants aged 25–74 had an HPV or LBC test for any reason in 2018–2022. This equates to coverage of 76.6% of the target population.

Definition:

Number of participants aged 25–74 screened in a 5-year period as a percentage of eligible females in the population.

Rationale:

Higher participation in cervical screening means that more precancerous abnormalities can be detected and treated, which is necessary for achieving the overall aim of reducing incidence and mortality from cervical cancer.

Guide to interpretation:

A higher participation rate is better.

Data considerations:

Prior to this report, participation was estimated as 5 years of data were not available.

In this report, participation has been calculated in accordance with the formal definition for the first time, now that 5 years of cervical screening data are available.

Under the performance indicator of ‘Participation’, both participation and coverage are measured. Participation is restricted to only screening HPV tests, whereas coverage is not restricted in this way, and is a better indication of overall participation in cervical screening (see Box 3.1.1).

All data are reported for both participation and coverage. This provides the flexibility for end-users of these data to use either participation or coverage as the measure of participation to suit their requirements, either in Australia, or in international comparisons.

Box 3.1.1: Definition of cervical screening participation and coverage

Participation is the number of participants aged 25–74 who had a screening HPV test (primary screening or follow-up HPV test) as a proportion of the number of eligible females aged 25–74 in the population.

Coverage is the number of participants aged 25–74 who had an HPV test or LBC test for any reason as a proportion of the number of eligible females aged 25–74 in the population.

Coverage is similar to the definition of participation for the previous NCSP, which was the proportion of females who had a Pap test for any reason. It is a better indication of overall participation in cervical screening and is therefore appropriate for international comparisons.

Results

Participation over the 5 years 2018–2022

The calculation of participation in cervical screening is restricted to participants who had an HPV test over the 5 years 2018 to 2022 for which the reason was primary screening HPV test or follow-up HPV test. This excludes participants who had an HPV test for reasons other than screening (such as investigation of symptoms or test of cure).

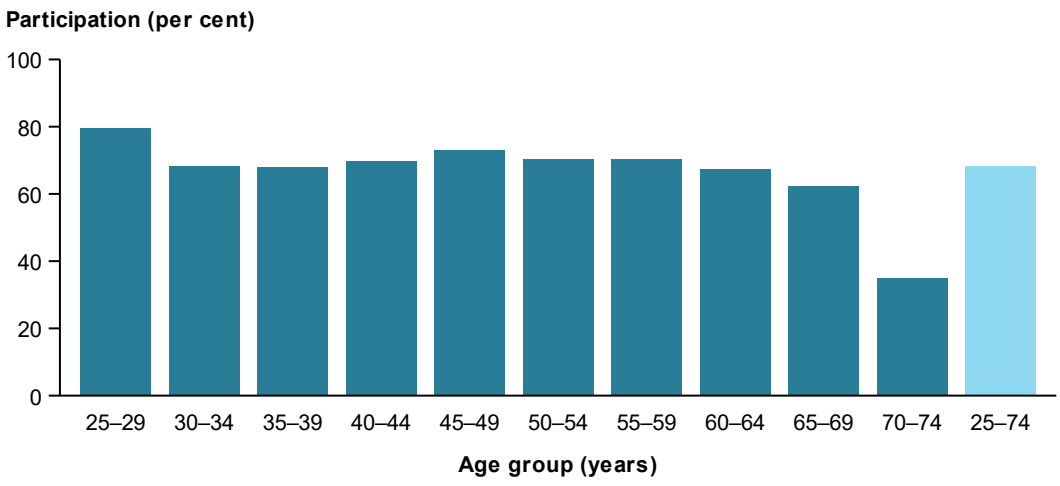
The denominator for 2018–2022 is the average number of females in the population aged 25–74 over the 5 years 2018 to 2022, adjusted to remove the estimated number who have had a hysterectomy. This is known as the eligible population for cervical screening (noting that this eligible population will include females who are not at risk of cervical cancer or who are not eligible to screen but are not practically able to be removed from the population).

In 2018–2022, there were 4,708,848 participants aged 25–74 who had a screening HPV test, estimated to be 68.4% of the eligible population (68.5% after adjusting for age to allow comparison over time or across population groups).

Participation by age in 2018–2022

The highest participation in cervical screening of 79.5% was observed in participants aged 25–29. The lowest participation was observed in participants aged 70–74, with only 34.9% of this age group screening (Figure 3.1.1). Note that participants aged 70–74 have re-entered the target age group under the renewed NCSP after leaving the previous NCSP after age 69, so lower participation is expected in this age group.

Figure 3.1.1: Participation, by age, 2018–2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A1.1.

Participation by state and territory in 2018–2022

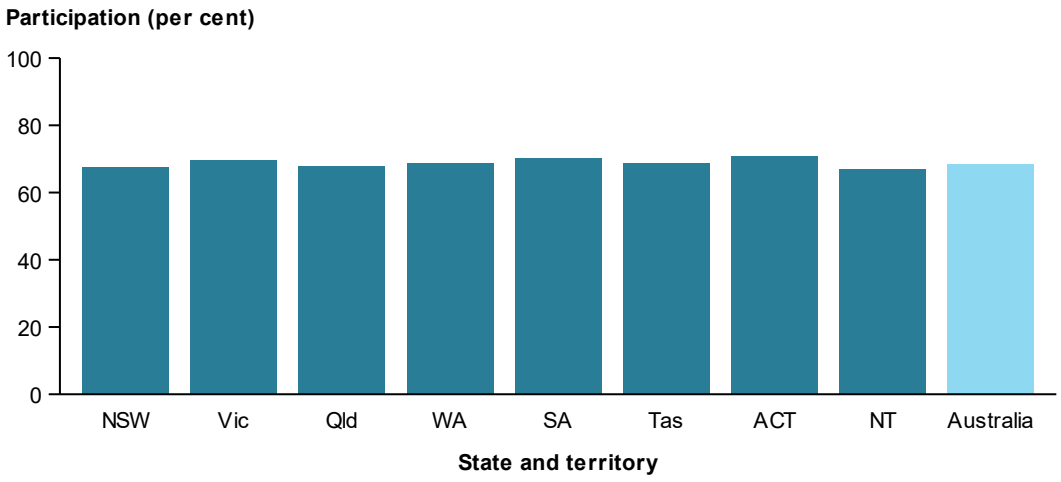
Participation in cervical screening across states and territories is shown in Figure 3.1.2.

Direct comparisons between the states and territories of Australia are not advised, due to the substantial differences that exist between the jurisdictions, including population, area, geographical structure, policies, and other factors.

Even with these differences, participation was very similar across states and territories, ranging between 67.0% and 70.9% after adjusting for age.

Note that participation for Victoria, and to a lesser extent South Australia, is likely to be an underestimate of true participation due to the non-inclusion of current Compass participants who would otherwise be included in the numerators in these two jurisdictions.

Figure 3.1.2: Participation, by state and territory, participants aged 25–74, 2018–2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A1.2.

Participation by remoteness area in 2018–2022

Participation in cervical screening was similar across most remoteness areas, although with a gradual decrease with increasing remoteness (Figure 3.1.3).

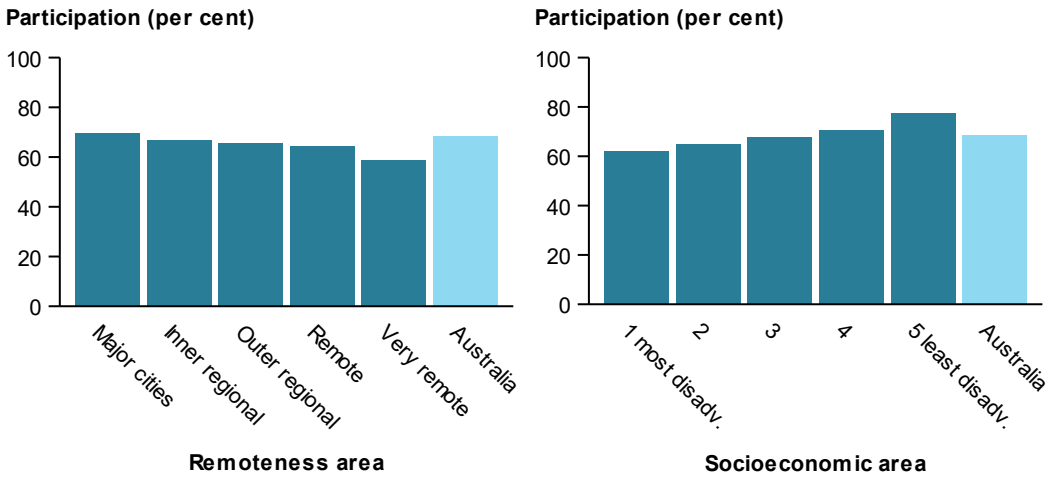
After adjusting for age, participation was highest for participants residing in *Major cities* at 69.6%, decreasing to 66.6% in *Inner regional*, 65.5% in *Outer regional* and 64.2% in *Remote* areas. Participation was lowest for participants residing in *Very remote* areas, at 58.7%.

Participation by socioeconomic area in 2018–2022

Participation in cervical screening increased with decreasing socioeconomic disadvantage (Figure 3.1.3).

After adjusting for age, participation was lowest for participants residing in areas with highest disadvantage at 61.9%, and highest for participants residing in areas of lowest disadvantage at 77.4%.

Figure 3.1.3: Participation, by remoteness area and socioeconomic area, participants aged 25–74, 2018–2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in tables A1.3 and A1.4.

Progression towards 5-year participation in the 5 years 2018–2022

Previously there were not enough years of data to report 5-year participation, so a measure of progression towards 5-year participation was introduced. This was calculated using the available data for the numerator, and the 5-year 2018-2022 population as the denominator.

Each year, the numerator was increased by a calendar year, while the denominator remained the same. This measures progression towards 5-year participation. Previously the years 2018, 2018–2019, 2018–2020, and 2018–2021 were reported. Now with the addition of 2018–2022, the progression towards 5-year participation for 2018–2022 is complete.

Using this methodology for those aged 25–74, there were 1,629,693 participants in 2018, representing 23.7% of the population for 2018–2022. This increased to 3,172,891 participants in 2018–2019 (46.1% of the population), and 3,819,989 in 2018–2020 (55.5%). There were 4,290,629 participants in 2018–2021 (62.3%), and 4,708,848 participants in 2018–2022, representing 68.4% of the population for 2018–2022.

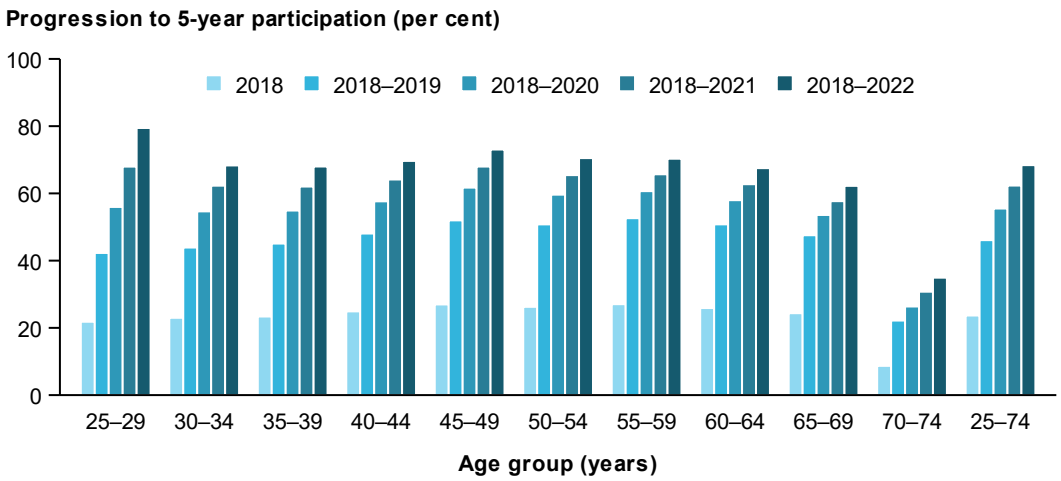
Progression towards participation by age in the 5 years 2018–2022

Progression towards 5-year participation by age group shows a trend that matches the expected pattern of participants screening over the first 5 years of the renewed NCSP.

Higher numbers in 2018 and 2019 primarily reflect participants having their first HPV test in the renewed NCSP after a previous negative Pap test under the previous NCSP. Age trends for these participants in 2018–2019 are similar to those observed under the previous NCSP.

Lower numbers in 2020, 2021, and 2022 primarily reflect participants who are overdue for a screen, or who are newly eligible to screen – largely due to turning 25. This has led to a greater proportion of those in the youngest age group 25–29 participating in the years 2020, 2021, and 2022. As a result, participants aged 25–29 had one of the highest levels of participation in cervical screening across the age groups in 2018–2022 (Figure 3.1.4).

Figure 3.1.4: Progression towards 5-year participation, by age, 2018, 2018–2019, 2018–2020, 2018–2021, and 2018–2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A1.6.

This is different to both the renewed NCSP for 2018–2019 and the previous NCSP, in which younger participants had the lowest levels of participation in cervical screening.

It is difficult to tease apart what may be an artefact of the unique circumstances of the transition from the previous NCSP to the renewed NCSP, and what might be higher participation of this younger age group. Invitations to screen at age 25 are new to the renewed NCSP, which may play a role. Also, whilst not directly comparable, relatively high particiation was seen in the youngest age groups in the previous NCSP when participation was measured over 5 years instead of the usual 2 years in the annual *Cervical screening in Australia* reports.

It will be interesting to follow participation of the younger age groups over the coming years to see how this trend progresses. A high level of both commencement and continuation of screening in those aged 25 would be a highly beneficial trend that, along with high HPV vaccine coverage, will progress Australia towards the elimination of cervical cancer.

Coverage over the 5 years 2018–2022

While both participation and coverage are valid indicators of participation in cervical screening in Australia, coverage is a better indication of overall involvement in cervical screening and is therefore appropriate for international comparisons, as well as within Australia where overall involvement in cervical screening is the desired measure.

While the calculation of participation is restricted to participants who had a primary screening HPV test or follow-up HPV test in the reporting period, coverage is the proportion of the population who are eligible to screen who have any cervical screening test. This includes participants who have an HPV or LBC test that are not performed for screening reasons because they are following another pathway under the renewed NCSP.

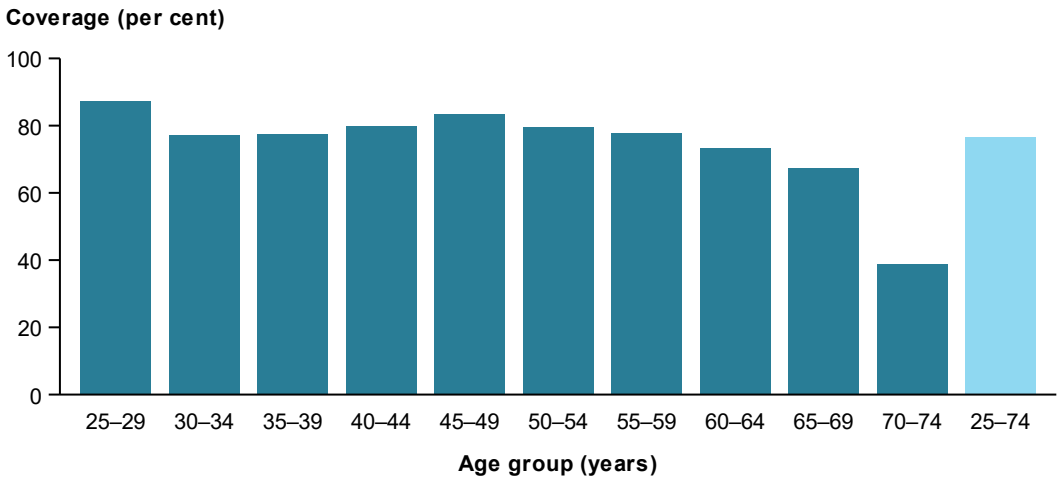
The measure of coverage is calculated using the same methodology as participation but includes everyone who had an HPV or LBC test for any reason, including primary or follow-up screening, investigation of signs or symptoms, test of cure, as part of a colposcopy, or for any other reason as specified in the clinical guidelines for cervical screening.

In 2018–2022, there were 5,274,192 participants aged 25–74 who had an HPV or LBC test for any reason. This is an estimated coverage rate of 76.6% of the eligible population (76.9% after adjusting for age to allow comparison over time or across population groups).

Coverage by age in 2018–2022

The highest coverage was in participants aged 25–29, with 87.4% of this age group having an HPV or LBC test for any reason in 2018–2022. Coverage was lowest at 38.9% for participants aged 70–74 (Figure 3.1.5). As noted for participation, participants aged 70–74 have re-entered the target age group under the renewed NCSP after leaving the previous NCSP after age 69, so lower numbers are expected.

Figure 3.1.5: Coverage, by age, 2018–2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A1.9.

Coverage by state and territory in 2018–2022

Coverage across states and territories is shown in Figure 3.1.6.

Direct comparisons between the states and territories of Australia are not advised, due to the substantial differences that exist between the jurisdictions, including population, area, geographical structure, policies, and other factors.

Figure 3.1.6: Coverage, by state and territory, participants aged 25–74, 2018–2022

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A1.10.

Even with these differences, coverage was very similar across states and territories, ranging between 75.2% and 79.5% after adjusting for age.

Note that coverage for Victoria, and to a lesser extent South Australia, is likely to be an underestimate of true participation due to the non-inclusion of current Compass participants who would otherwise be included in the numerators for participation in these two jurisdictions.

Coverage by remoteness area in 2018–2022

Coverage was similar across most remoteness areas, although with a gradual decrease with increasing remoteness (Figure 3.1.7).

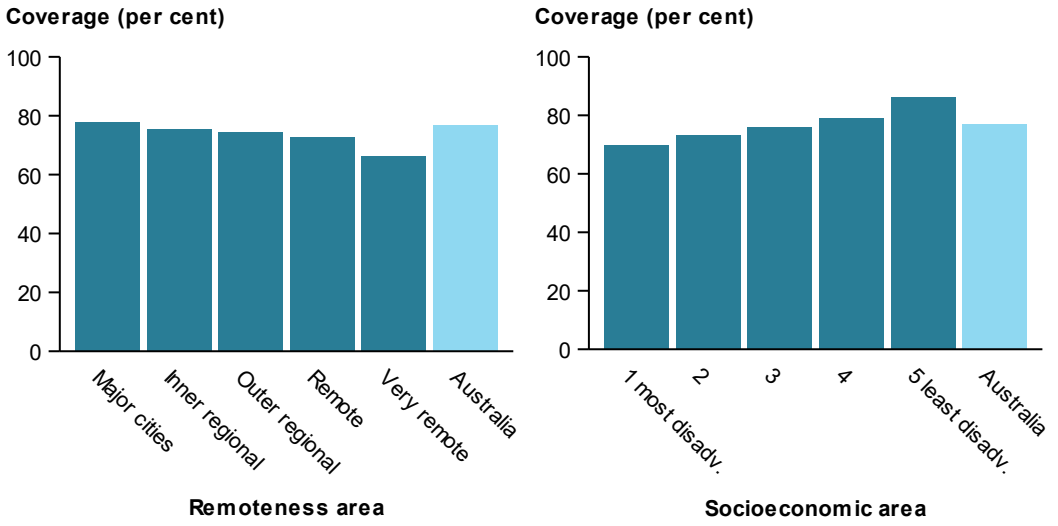
After adjusting for age, coverage was highest for participants residing in Major cities at 77.8%, decreasing to 75.3% in Inner regional, 74.3% in Outer regional and 72.6% in Remote areas. Coverage was lowest for participants residing in Very remote areas, at 66.1%.

Coverage by socioeconomic area in 2018–2022

Coverage increased with decreasing socioeconomic disadvantage (Figure 3.1.7).

After adjusting for age, coverage was lowest for participants residing in areas with highest disadvantage at 69.7%, and highest for participants residing in areas of lowest disadvantage at 86.3%.

Figure 3.1.7: Coverage, by remoteness area and socioeconomic area, participants aged 25–74, 2018–2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in tables A1.11 and A1.12.

Coverage by reason for test in 2018–2022

The reason why an HPV test and/or an LBC test was performed for those participants who were included in the coverage measure are shown in Table A1.13.

These data show that, while screening was the most common reason an HPV test was performed, a co-test (in which both an HPV test and LBC test are performed irrespective of the HPV test result) for either test of cure or investigation of signs or symptoms comprised the next largest proportion (Table A1.13).

Number of cervical screening tests over the 5 years 2018–2022

Measures of participation and coverage are based on the number of participants who had a cervical screening test, not the number of tests. However, it is also useful to observe the number of cervical screening tests that are performed.

Number of screening HPV tests over the 5 years 2018–2022

The number of cervical screening tests that are included in the definition of participation (primary screening and follow-up HPV tests) is reported.

This is different to the formal measure of activity introduced when investigating the impact of COVID-19 on screening in 2020 (AIHW 2020; AIHW 2021), which is the number of primary screening HPV tests performed. The definition of activity was chosen to restrict this measure to participants not at increased risk of a significant cervical abnormality, which may have influenced their decision to screen. Activity was reported every 3 months to March 2023 in *Cancer screening programs: quarterly data*, and is accessible here https://www.aihw.gov.au/reports/cancer-screening/national-cancer-screening-programs-participation/contents/about (AIHW 2023c)

The number of cervical screening tests (primary screening HPV tests and follow-up HPV tests) performed each month over the 5 years 2018 to 2022 is shown in Figure 3.1.8.

Most noticeable is the markedly lower number of cervical screening tests in 2020, 2021, and 2022 compared to 2018 and 2019. The number of screening HPV tests was expected to be lower from 2020 due to the change from 2-yearly Pap tests to 5-yearly Cervical Screening Tests. This is because the first 2 years of the renewed NCSP was a transition period in which participants who had had a Pap test under the previous NCSP become due for their first screening HPV test, after which time they moved to a 5-yearly screening interval.

This means that screening HPV tests in 2020, 2021 and the majority of 2022 were comprised of tests performed for participants who were overdue for their first screening HPV test, and those who were newly eligible for cervical screening – mostly due to turning 25. This has the effect of a sharp decline in the number of screening HPV tests in 2020, 2021, and 2022 compared to 2018 and 2019, as illustrated in Figure 3.1.8.

Number of HPV and LBC tests over the 5 years 2018–2022

The number of tests that are included in the definition of coverage (all HPV and LBC tests) is also reported.

The number of cervical screening tests (HPV tests and LBC tests) performed each month over the 5 years 2018 to 2022 is shown in Figure 3.1.9.

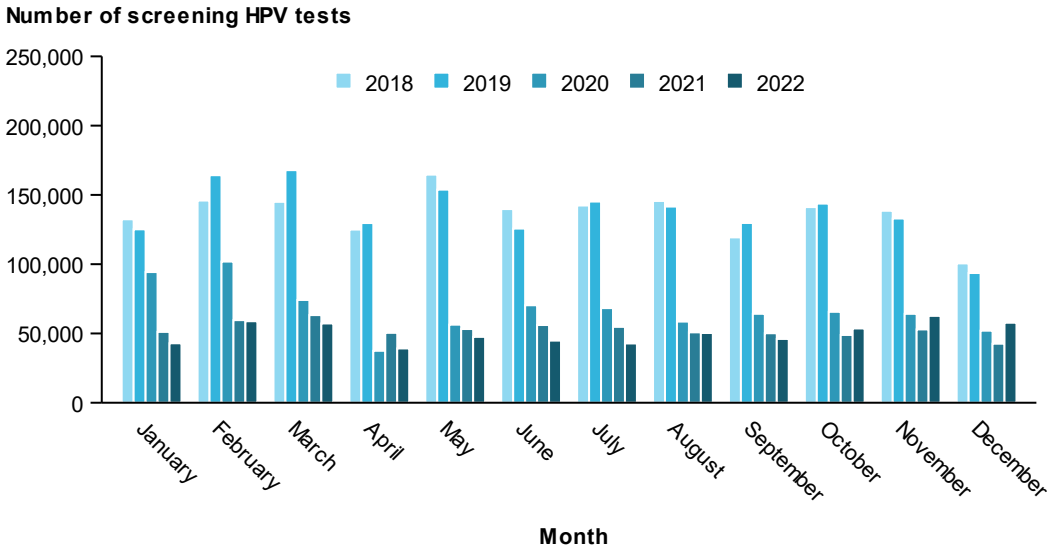
Monthly trends over the 5 years 2018–2022

All years had similar month-to-month trends, with fewer screening tests in April and December, aligning with the national holidays of Easter and Christmas.

However, the number of cervical screening tests in April 2020 and May 2020 appear lower than would be expected in comparison to the number of cervical screening tests in 2021.

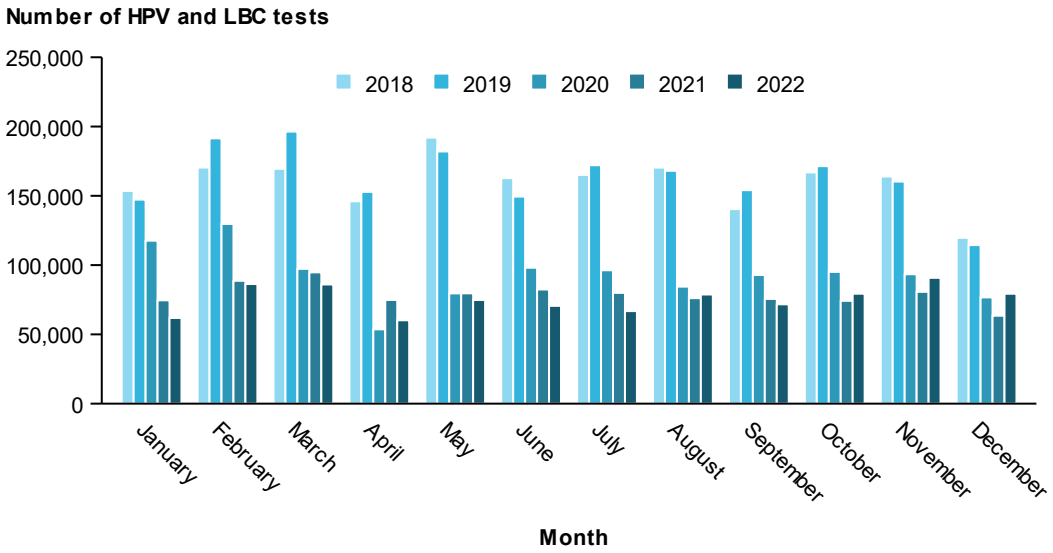
This is likely an impact of the COVID-19 pandemic in Australia: by the end of March 2020, restrictions had shut down all non-essential businesses and activities, with Australians urged to stay at home. Restrictions started to ease from late April. This aligns with the lower-than-expected number of cervical screening tests in April 2020, and to a lesser extent May 2020.

Figure 3.1.8: Number of screening HPV tests per month, participants aged 25–74, 2018, 2019, 2020, 2021, and 2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A1.14.

Figure 3.1.9: Number of HPV and LBC tests per month, participants aged 25–74, 2018, 2019, 2020, 2021, and 2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A1.15.

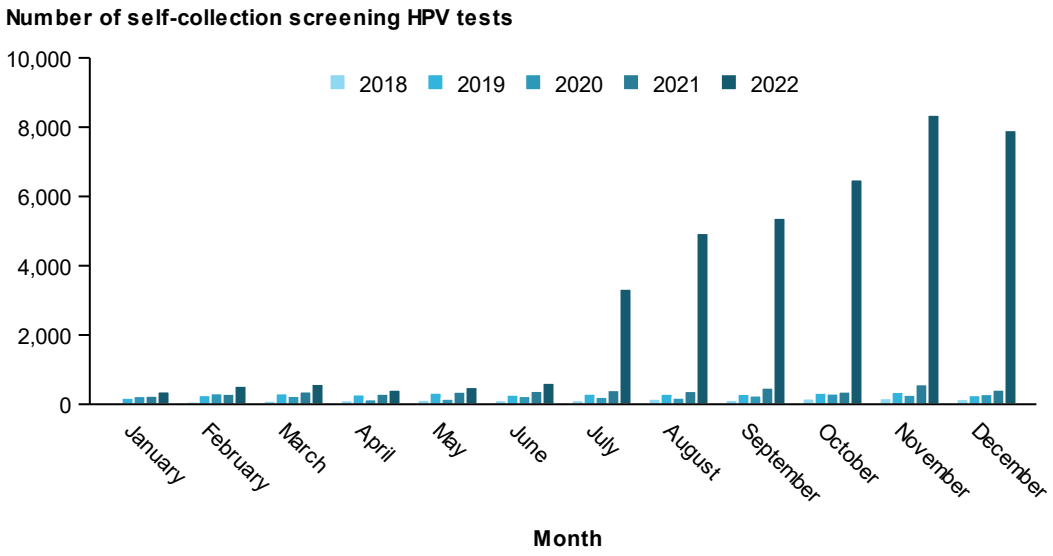
Number of cervical screening tests by collection method

Self-collection is a strategy that was introduced along with the renewed NCSP to offer an alternative method of sample collection for those who are under-screened or who have never screened, to encourage their participation in cervical screening. However, from 1 July 2022, self-collection became an available method of sample collection for all participants in cervical screening aged 25–74, not only those who met the criteria for self-collection in place from 1 December 2017 to 30 June 2022.

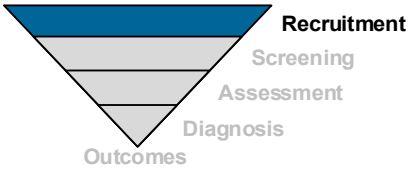
The number of cervical screening tests included in the definition of participation (primary screening and follow-up HPV tests) that were self-collected each month over the 5 years 2018 to 2022 is shown in Figure 3.1.10.

As expected, the number of tests that were self-collected was very low when these were restricted to under-screeners or never-screeners. This number increased rapidly from July 2022 when restrictions were lifted and all participants became eligible, from several hundred per month prior to July 2022, to more than 8,000 in November 2022 (Figure 3.1.10).

Figure 3.1.10: Number of self-collected screening HPV tests per month, participants aged 25–74, 2018, 2019, 2020, 2021, and 2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A1.16.



Performance Indicator 2: Response to invitation

Summary of response to invitation data

Of the 1,583,079 invitees aged 25–74 sent an invitation to screen or rescreen in 2022, 16.3% had an HPV test within 6 months.

Definition:

Percentage of invitees aged 25–74 invited to screen or rescreen in a calendar year who screened within 6 months.

Rationale:

How many invitees screen in response to an invitation provides a measure of the effectiveness of sending invitations. Measuring this by mode of invitation will also provide useful information as to the most effective method of invitation (which may differ by age or other factors).

Guide to interpretation:

A higher response rate is better.

Data considerations:

Invitations are restricted to invitations to screen (letter types A1 and B1) and invitations to rescreen (letter types C1 and D1). Reminders to screen or rescreen are not included.

It is not possible to know how many invitees received an invitation to screen or rescreen, therefore these data are based on invitations sent, not invitations received.

Currently invitations are only sent by letter, so response to invitation according to mode of invitation cannot yet be measured.

Box 3.2.1: Limitations measuring response to invitation

There are currently two main limitations when measuring response to invitation to screen or rescreen in the NCSP.

First: an invitation is not required to participate in cervical screening. Any eligible individual may access a Cervical Screening Test through their healthcare provider, irrespective of whether they have received an invitation from the NCSR.

Second: over the years 2018 to 2022, there were a large group of participants who were not sent invitations, and so are not included in these data. Specifically, the majority of these data do not currently include participants aged 30–74 whose previous Pap test was normal. While transitioning from 2-yearly to 5-yearly screens, this group were sent a *reminder* to rescreen after they were overdue, not an *invitation* to rescreen. As this indicator is restricted to invitations, they are not included for the majority of the data, noting that *this group will start to receive an invitation to rescreen from September 2022*, after the transition from 2-yearly to 5-yearly screens is complete.

This means that current response to invitation data are unlikely to be representative of all participants in the NCSP over the years 2018 to 2022.

Results

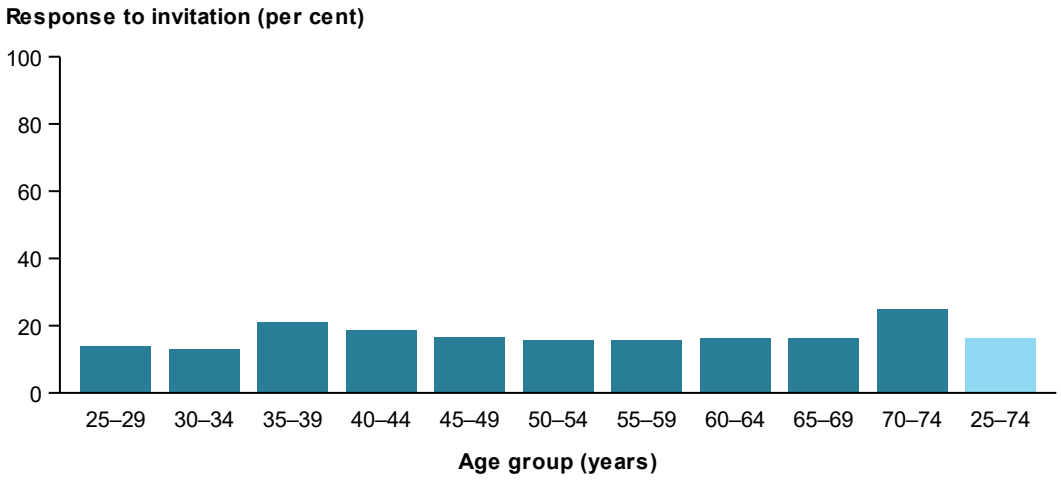
In 2022, there were 1,583,079 invitees aged 25–74 sent an invitation to screen or rescreen. Of these, 257,466 had an HPV test within 6 months of the date the invitation was sent. This was 16.3% of invitees aged 25–74 who were sent an invitation in 2022.

Response to invitation by age

Response to invitation for 2022 is shown by age in Figure 3.2.1.

In 2022, the highest number of invitations to screen or rescreen were to invitees aged 25–29. There were 228,342 invitees aged 25–29 invited to screen in 2022, of whom 31,539 had an HPV test. This age group had a response to invitation of 13.8%. For age groups between 30–34 and 65–69, the response to invitation ranged between 12.8% (for invitees aged 30–34) and 20.9% (for invitees aged 35–39) (Figure 3.2.1). Invitees aged 70–74 had the highest response to invitation, with 24.8% having an HPV test within 6 months.

Figure 3.2.1: Response to invitation to screen or rescreen within 6 months, by age, 2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A2.1.

During the transition from 2-yearly Pap tests to 5-yearly HPV tests, most of those invited to screen and rescreen were aged 25–29 and were invited to screen as they reached age 25.

Consequently, the response rate of invitees aged 25–29 has had a great impact on the overall response rate for invitees aged 25–74 for the years 2018 to 2020.

- In 2018, the response rate was 26.1% for 25–29, compared with 26.1% for 25–74.
- In 2019, the response rate was 12.8% for 25–29, compared with 14.6% for 25–74.
- In 2020, the response rate was 10.7% for 25–29, compared with 10.9% for 25–74.

Conversely, in 2021 and 2022, there were a greater proportion of invitations sent to age groups other than 25–29 than in previous years. The effect of this is that the response rate of invitees aged 25–29 does not impact the overall response rate for invitees aged 25–74 in 2021 and 2022 as much as in previous years.

- In 2021, the response rate was 12.0% for 25–29, compared with 8.3% for 25–74.
- In 2022, the response rate was 13.8% for 25–29, compared with 16.3% for 25–74.

Response to invitation by letter type

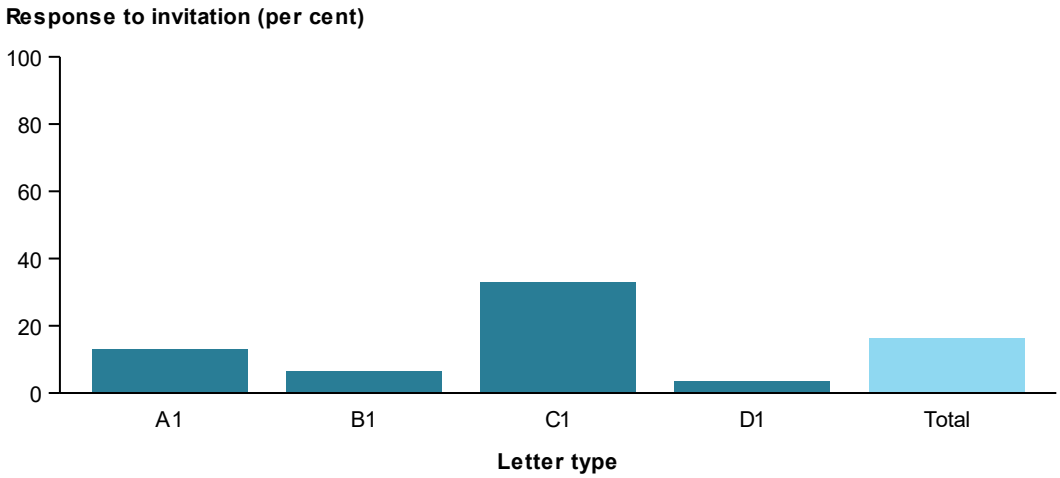
The proportion of invitees aged 25–74 who screened within 6 months of an invitation to screen or rescreen is shown by letter type in Figure 3.2.2.

Letter type ‘A1 Invitation to screen’ and letter type ‘C1 Invitation to rescreen’ had the highest response to invitation, with 13.0% of invitees sent an invitation to screen and 33.0% of invitees sent an invitation to rescreen having an HPV test within 6 months.

Response was lower for those invited to screen or rescreen who were eligible to self-collect, with 6.3% of invitees sent ‘B1 Invitation to screen eligible to self-collect’ and 3.4% of invitees sent ‘D1 Invitation to rescreen eligible to self-collect’, having an HPV test within 6 months.

Self-collection is a strategy that was introduced along with the renewed NCSP to offer an alternative method of sample collection for those who are under-screened or who have never screened, to encourage their participation in cervical screening. However, from 1 July 2022, self-collection became an available method of sample collection for all participants in cervical screening aged 25–74, not only those who met the criteria for self-collection in place from 1 December 2017 to 30 June 2022.

Figure 3.2.2: Response to invitation to screen or rescreen within 6 months, by letter type, invitees aged 25–74, 2022



Note: A1 Invitation to screen; B1 Invitation to screen (self-collect eligible); C1 Invitation to rescreen; D1 Invitation to rescreen (self-collect eligible)

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A2.2.

Invitations with the highest response were letter type ‘C1 Invitation to rescreen’, with 33.0% of invitees sent this letter type having an HPV test within 6 months. During the transition to 5-yearly screening under the renewed NCSP, this letter was most often used to invite invitees with prior abnormalities to rescreen. After transition, this invitation type is used for invitees due for a rescreen 5 years after their last HPV test.

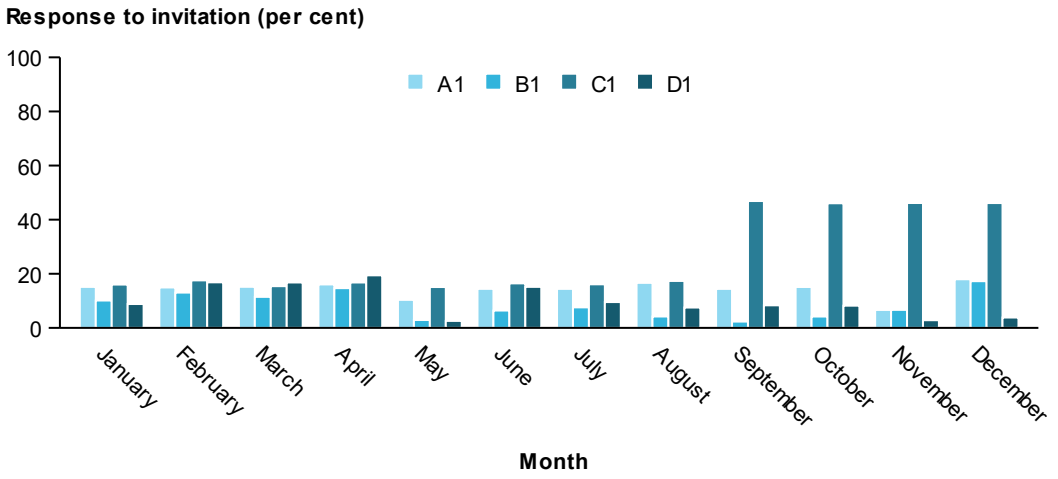
With participants due for their second screening HPV test from December 2022, and invitation letters sent 3 months prior to a participant’s due date, it is reasonable to consider that the higher response rate for letter type ‘C1 Invitation to rescreen’ may be related to participants that had previously only received a *reminder to rescreen*, now receiving an *invitation to rescreen* given that the transition from 2-yearly to 5-yearly screen is complete.

This is examined in Figure 3.2.3, that shows the response to invitation to screen or rescreen within 6 months by letter type and month, from January 2022 to December 2022. Response to invitation is high in September, October, November, and December for letter type ‘C1

Invitation to rescreen', which correlates to when participants would be invited to rescreen 5 years after their first screening HPV test in the renewed NCSP.

It is encouraging that inclusion of the group of participants who had previously been excluded from this performance indicator demonstrate a high response to invitation, which may lead to a higher overall response to invitation to screen or rescreen for the renewed NCSP.

Figure 3.2.3: Response to invitation to screen or rescreen within 6 months, by letter type and month, invitees aged 25–74, 2022



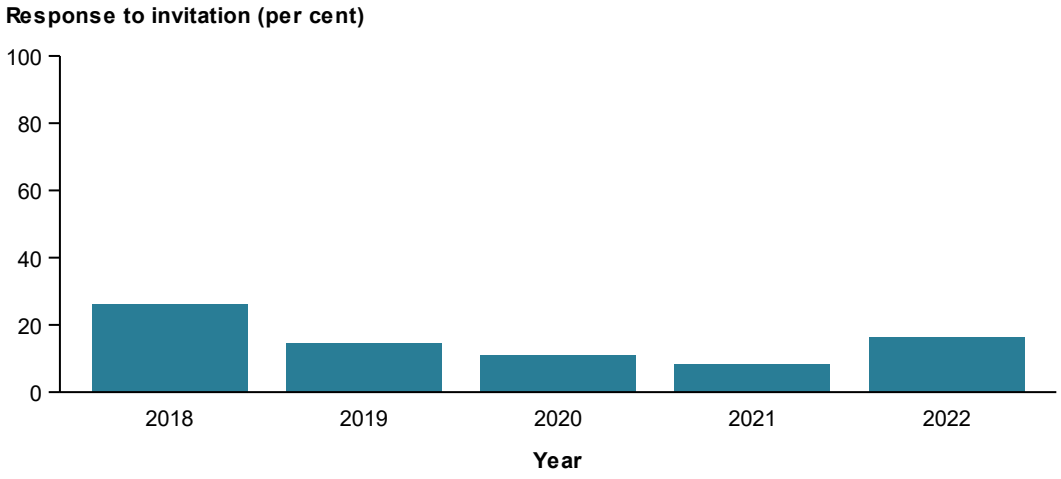
Note: A1 Invitation to screen; B1 Invitation to screen (self-collect eligible); C1 Invitation to rescreen; D1 Invitation to rescreen (self-collect eligible)

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023.

Response to invitation trends

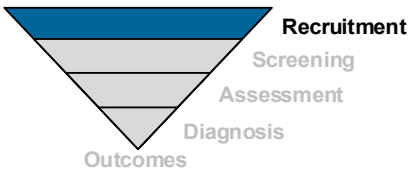
Response to invitation is shown for the years 2018 to 2022 in Figure 3.2.4. Response to invitation to screen or rescreen for invitees aged 25–74 was 26.1% in 2018, 14.6% in 2019, 10.9% in 2020, 8.3% in 2021, and 16.3% in 2022.

Figure 3.2.4: Response to invitation to screen or rescreen within 6 months, by year, invitees aged 25–74, 2018 to 2022



Note: Due to differences in the number of invitations sent, and that data in the transition are unlikely to be representative of all participants, response to invitation trends should be interpreted with caution.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A2.4.



Performance Indicator 3: Rescreening

Summary of rescreening data

No data reported for this performance indicator.

Definition:

Percentage of participants aged 25–69 whose screening HPV test in the index calendar year did not detect oncogenic HPV who rescreened within a specified period of time.

Rationale:

The proportion of the target population screened within the recommended screening interval is a key determinant of the success of a screening program; screening more frequently increases costs with minimal or no gain in a reduction in incidence and mortality; screening less frequently results in a decrease in overall participation in screening and means that fewer precancerous abnormalities can be detected and treated, necessary for achieving the overall aim of reducing incidence and mortality from cervical cancer. This indicator measures the proportion of participants who rescreened early, appropriately, or late.

Note that although the National Cervical Screening Program target age group is 25–74, only participants aged 25–69 are reported for rescreening because participants aged 70–74 at the time of their screen would be outside the target age group of 25–74 when they are due for their 5-year rescreen.

Guide to interpretation:

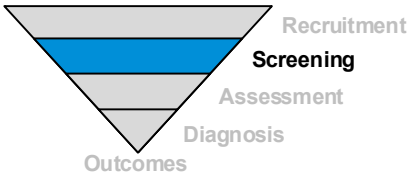
For those participants recommended to rescreen in 5 years, a higher rescreen rate within 4 years 9 months and 5 years 3 months (considered rescreening ‘on time’) is better.

Data considerations:

More than 5 years need to have passed since the inception of the renewed NCSP to allow this performance indicator to be measured as per the definition, since it is intended to measure rescreening:

- within 4 years 9 months
- between 4 years 9 months and 5 years 3 months
- between 5 years 3 months and 6 years
- more than 6 years.

Data are not yet available to support the reporting of this performance indicator



Screening

Performance Indicator 4: Screening results

Summary of screening results data

Of the 482,482 primary screening episodes in 2022 in participants aged 25–74:

- 89.4% were low risk
- 7.5% were intermediate risk
- 2.3% were higher risk
- 0.8% could not be assigned a risk

Definition:

Percentage of screening episodes in participants aged 25–74 in each risk category in a calendar year.

Rationale:

Distribution of screening episode results is a key measure for the screening program and any changes in these distributions over time will require investigation within the broader context of the screening program.

Guide to interpretation:

There are three risk categories (low, intermediate, and higher) for a primary screening episode that are determined by a combination of the primary screening HPV test result and, where indicated, the LBC test result. Risk is defined as the risk of a significant cervical abnormality. Determination of risk is illustrated in the screening pathway (Figure 2.1).

- A primary screening HPV test that does not detect oncogenic HPV indicates low risk, and no reflex LBC is performed.
- A primary screening HPV test that detects oncogenic HPV 16/18 indicates higher risk, and while reflex LBC is performed, the outcome of this test does not affect the risk.
- A primary screening HPV test that detects oncogenic HPV (not 16/18) does not indicate a risk on its own, but requires reflex LBC to be performed to determine whether the risk is intermediate or higher.

In some cases, a primary screening HPV test that does not detect oncogenic HPV is followed by an LBC, despite this not being indicated. These episodes have been allocated a risk according to their LBC test result, which is intermediate or higher if the LBC is not negative.

There are also some primary screening episodes for which a risk cannot be allocated, usually due to unsatisfactory tests. Note that if a primary screening test is repeated due to an unsatisfactory test, the repeat test will also have a ‘reason for HPV test’ of primary screening HPV test. Unsatisfactory HPV tests that are followed by an LBC are only allocated a risk if the LBC indicates a high-grade abnormality, glandular abnormality, or cancer (higher risk).

A reflex LBC is only indicated when the primary screening HPV test detects oncogenic HPV. LBC test results are the same as Pap test results from the previous NCSP. These are:

- negative (no abnormality detected)
- low-grade abnormality (possible or definite low-grade squamous intraepithelial lesion)
- high-grade abnormality (possible or definite high-grade squamous intraepithelial lesion or squamous cell carcinoma)
- glandular abnormality (possible or definite glandular abnormality or adenocarcinoma)

The reflex LBC can also be unsatisfactory for evaluation.

For primary screening episodes where the HPV test detected oncogenic HPV (not 16/18) (and therefore requires reflex LBC for a risk to be allocated):

- a reflex LBC test result of negative or low-grade abnormality indicates intermediate risk
- a reflex LBC test result of high-grade abnormality or glandular abnormality indicates higher risk.

The reflex LBC can occur on a later date than the primary screening HPV test if the HPV test is self-collected and oncogenic HPV is detected, or if the reflex LBC test is unsatisfactory and needs to be repeated. In the case that an unsatisfactory LBC test is repeated, the repeat LBC test result is reported in place of the initial unsatisfactory LBC test result. In both cases, a reflex LBC occurring on a later date is only included in the risk assessment if it occurs within 6 months of the primary screening HPV test.

Results

In 2022, there were 482,482 primary screening episodes in participants in the target age group 25–74. These primary screening episodes were assigned to one of the three risk categories of low, intermediate, or higher (or were unable to be assigned) based on the combination of the HPV test result and, where indicated, the LBC test result. This is explained in the ‘Guide to interpretation’ for this performance indicator.

Overall, of the primary screening episodes in 2022 in participants aged 25–74:

- 89.4% were low risk
- 7.5% were intermediate risk
- 2.3% were higher risk
- 0.8% could not be assigned a risk because either they were unsatisfactory for evaluation, or there was no LBC test performed after an HPV test detected oncogenic HPV, likely because either a participant did not return for a subsequent LBC test, or an LBC test was not performed at colposcopy within 6 months of a self-collected sample.

Primary screening episode results

In Table 3.4.1, the combination of primary screening HPV test result and LBC test result is shown for each primary screening episode.

Each combination has been colour-coded in this table according to risk of significant cervical abnormality. Low risk is indicated by light blue shading, intermediate risk is indicated by medium blue shading, and higher risk by darker blue shading. Primary screening episodes for which a risk could not be assigned have no shading.

Table 3.4.1: Primary screening HPV ± LBC test results, participants aged 25–74, 2022

Reflex LBC test result	Primary screening HPV test result			
	Unsatisfactory	Oncogenic HPV not detected	Oncogenic HPV (not 16/18) detected	Oncogenic HPV 16/18 detected
LBC not performed*	1,485	429,114	1,637	688
LBC Unsatisfactory	2	88	492	194
LBC Negative	11	2,219	24,969	4,815
LBC Squamous low-grade abnormality	7	99	11,322	1,977
LBC Squamous high-grade abnormality or squamous cell carcinoma	0	5	1,982	1,206
LBC Glandular abnormality or adenocarcinoma	0	1	67	102

* LBC is not indicated after an unsatisfactory HPV test or where oncogenic HPV is not detected; LBC not performed after oncogenic HPV detected can occur if a sample is self-collected and an LBC sample has not been collected (participant did not return or LBC not performed at colposcopy).

Note: Some primary screening HPV tests that did not detect oncogenic HPV were followed by an LBC test. These episodes have been allocated a risk according to their LBC test result. Unsatisfactory HPV tests followed by an LBC test are only allocated a risk if their LBC test result indicated a high-grade abnormality or cancer, as these screening episodes would be deemed higher risk irrespective of the primary screening HPV test result.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Primary screening episode risk

Low risk

All low risk screening results were in participants who had a primary screening HPV test that did not detect oncogenic HPV. Of the 482,482 tests of this type, 429,114 did not have a reflex LBC, and among the 2,412 that did have a reflex LBC, 2,219 had a negative LBC.

Intermediate risk

Intermediate risk screening results were in participants who had a primary screening HPV test that detected oncogenic HPV (not 16/18) and had a reflex LBC that was negative or indicated a low-grade squamous abnormality. This constituted 36,291 of the 40,469 screening HPV tests of this type. There were also 99 screening episodes in which the primary screening HPV test did not detect oncogenic HPV but had a reflex LBC that indicated a low-grade squamous abnormality, that were deemed intermediate risk.

Higher risk

Higher risk screening results were in participants who had a primary screening HPV test that detected oncogenic HPV 16/18 and/or who had a reflex LBC that indicated a high-grade squamous abnormality, squamous cell carcinoma, or any glandular abnormality. There were 8,982 screening episodes in participants who had a primary screening HPV test that detected oncogenic HPV 16/18 irrespective of their reflex LBC result, with a further 2,055 due a reflex LBC that indicated a high-grade squamous abnormality, squamous cell carcinoma, or any glandular abnormality, irrespective of the primary screening HPV test result.

No risk assigned

Risk could not be assigned due to an unsatisfactory primary screening HPV test for 1,485 screening episodes, and due to an unsatisfactory reflex LBC for 582 screening episodes (2 screening episodes had both an unsatisfactory primary screening HPV test and an unsatisfactory reflex LBC, so are counted in both groups).

There were also 1,637 screening episodes that could not be assigned a risk due to the absence of a reflex LBC following a primary screening HPV test that detected oncogenic HPV (not 16/18). This is a higher number than in previous years, and is due to the large increase in self-collected HPV tests from July 2022 that saw a proportionate increase in the number of self-collected HPV tests that were not followed by a reflex LBC test, as participants need to return to their practitioner for a sample suitable for an LBC test following a self-collected HPV test that detected oncogenic HPV (not 16/18).

Unsatisfactory

In 2022 there were 1,505 screening episodes where the HPV test was unsatisfactory, and 776 screening episodes where the LBC test was unsatisfactory. These represent 0.3% and 0.2% of all screening episodes in participants aged 25–74, respectively.

Primary screening episode risk by age

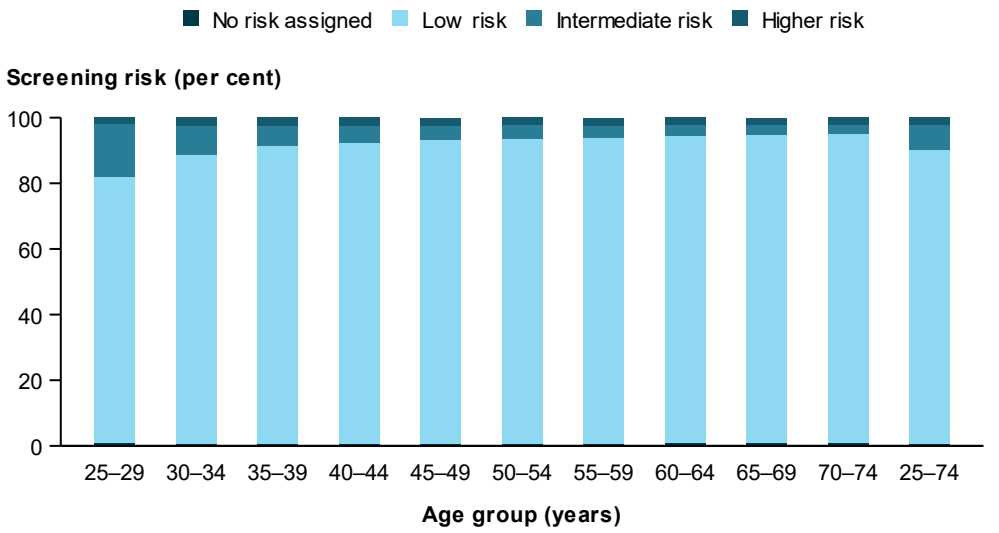
Risk categories for each age group are shown in Figure 3.4.1.

The proportion of primary screening episodes that were low risk was lower, and the proportion that were intermediate risk was higher, for younger participants. This indicates that, in participants aged less than 35, it was more common that oncogenic HPV (not 16/18) was detected during the screening episode, and that the LBC test result was either negative or low-grade.

For all age groups, the majority of primary screening episodes were low risk. The proportion that were higher risk was consistently low across all age groups.

The proportion of primary screening episodes for which risk could not be assigned was too low to be visible in the figure.

Figure 3.4.1: Primary screening episode risk, by age, 2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A4.1.

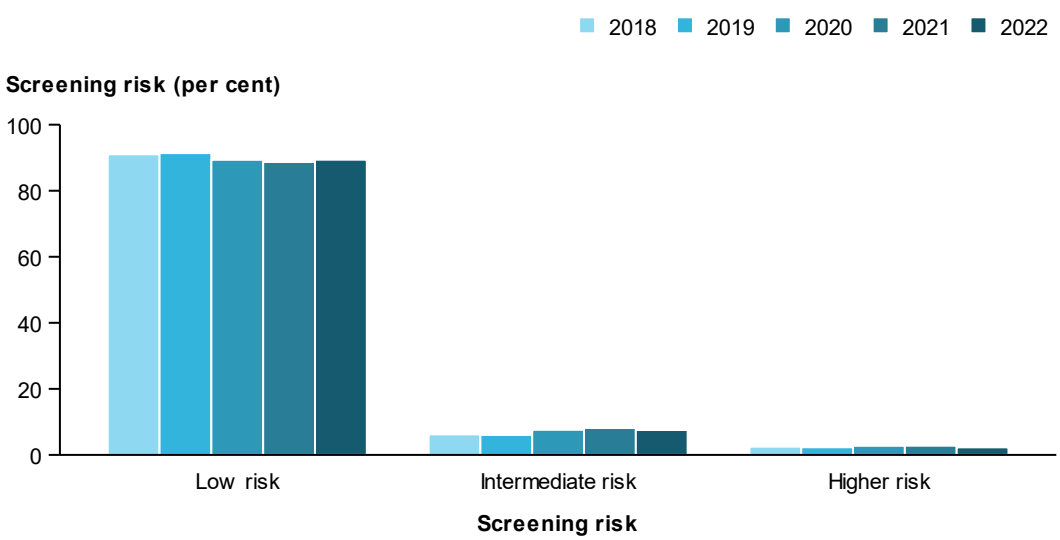
Primary screening episode risk trends

Between 2018 and 2022, there have been only small changes in the proportion of screening episodes that were low risk, intermediate risk, and higher risk.

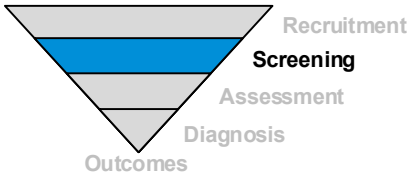
Risk categories for each year are shown in Figure 3.4.2.

The proportion of screening episodes that were low risk has decreased slightly from 91.0% in 2018 to 89.4% in 2022, whereas the proportion that were intermediate has increased slightly from 6.2% in 2018 to 7.5% in 2022. The proportion of screening episodes that were higher risk has remained very low, ranging between 2.3% and 2.8% over the years 2018 to 2022.

Figure 3.4.2: Primary screening episode risk, by year, participants aged 25–74, 2018 to 2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A4.3.



Performance Indicator 5: Correlation of screening results

Summary of correlation of screening results data

In 2021, there were 4,636 primary screening episodes that had an LBC that predicted a high-grade or glandular abnormality or cervical cancer for participants aged 25–74, with 3,762 followed by histology within 6 months. Of these histology tests, 73.4% had a histology result of high-grade cervical abnormality or cervical cancer.

Definition:

Level of agreement between screening results in participants aged 25–74 in a calendar year and subsequent histology test results within 6 months.

Rationale:

The correlation between a positive screening test result and the histology test or 'truth' (where this is performed) is a key measure of the accuracy of the HPV test, LBC test, and overall risk assigned to a screening episode. A histology test involves examination of tissue from the cervix through a microscope and is the primary diagnostic tool of the NCSP

Data considerations:

A complete assessment of the correlation between screening tests results and the 'truth' would have required all cervical screening tests (including negative) to be followed up by histology, but this is neither feasible nor desirable (as it would be unethical to require all participants who had an HPV test to also undergo a biopsy). Rather, this assessment is restricted to cervical screening tests and histology tests available on the NCSR, and is intended to provide measures that can be monitored annually to detect early indications of changes to the correlation between screening tests and histology tests.

These data are restricted to primary screening tests. Histology would usually only be performed following a primary screening test to confirm a suspected abnormality, according to the screening pathway and clinical guidelines. However, it is possible that some of the tests that have been included are not true primary screening tests, but may have been performed for another purpose, such as to investigate signs or symptoms of cervical cancer. In these cases, histology may be an outcome even in the absence of a positive screening test. It is also possible that some participants who have had a primary screening test may have a biopsy or surgical removal of tissue that includes cervical tissue for a benign condition (for example a hysterectomy), unrelated to a primary screening test result.

These data do not include primary screening tests not followed by histology, for which it is not possible to know the true disease state, or primary screening tests followed by histology more than 6 months after the screening test. Where there was more than one histology test within 6 months, the most serious histology result has been used. Risk refers to the risk of significant cervical abnormality for the primary screening test, irrespective of previous tests.

This performance indicator is restricted to histology tests notified by pathology laboratories. The NCSR supplements these data with MBS histology data, but as these do not include a result, they are not able to be included in these data.

In the case that an unsatisfactory LBC test is repeated, the repeat LBC test result is reported in place of the initial unsatisfactory LBC test result.

> This performance indicator is based on primary screening tests performed in 2021. This allows 6 months to 30 June 2022 to know whether a histology test occurred, and a further 6 months to 31 December 2022 to ensure that histology data to 30 June 2022 are complete.

Results

A screening test is not intended to be diagnostic, but aims to identify people who are more likely to have a disease and therefore require further investigation from diagnostic tests. These data examine how well the cervical screening test correlates with the histology finding or 'truth', where a histology test has been performed. Correlation between the primary screening test prediction and the histology finding provide valuable information about the accuracy of the screening test of the NCSP.

As stated in the data considerations, a complete assessment of the correlation between screening tests results and the 'truth' would have required all cervical screening tests (including negative tests) to be followed up by histology. This assessment is restricted to cervical screening tests and histology tests available on the NCSR, and is intended to provide measures that can be monitored annually to detect early indications of changes to the correlation between screening tests and histology results.

These data include primary screening tests performed for participants aged 25–74 in 2021 where the test was followed by histology within 6 months (either to confirm the presence or absence of disease, or for other reasons). These data do not include primary screening tests not followed by histology, for which it is not possible to know the true disease state, or primary screening tests followed by histology more than 6 months after the screening test.

In 2021 there were 505,755 primary screening HPV tests performed for participants aged 25–74. Of these, 11,892 (2.4%) were followed by a histology test within 6 months.

Key outcomes are shown in Tables 3.5.1 and Table A5.1 and described in the following text.

In these data, there were 449,124 primary screening tests that did not detect oncogenic HPV, 3,697 (0.8%) of which had histology performed within 6 months. Primary screening tests that did not detect oncogenic HPV would not usually be followed by histology, so these participants should not be considered indicative of all participants with a primary screening test that did not detect oncogenic HPV, who are primarily at low risk of significant cervical abnormality. Of the 3,697 histology tests performed within 6 months, 3,491 (94.4%) were negative (and thus were likely due to benign conditions unrelated to cervical screening), 119 (3.2%) were low-grade, 13 (0.4%) were high-grade, and 5 (0.1%) were cervical cancer.

There were 40,891 primary screening tests that detected oncogenic HPV (not 16/18) for which the reflex LBC result was negative or low-grade (intermediate risk of significant cervical abnormality), 755 (1.8%) of which had histology performed within 6 months. Again, these primary screening tests would not usually be followed by histology, so these should not be considered indicative of all participants with this screening test result. Of the 755 histology tests performed within 6 months, 378 (50.1%) were negative, 272 (36.0%) were low-grade, 93 (12.3%) were high-grade, and 6 (0.8%) were cervical cancer.

There were 2,586 primary screening tests that detected oncogenic HPV (not 16/18) for which the reflex LBC result was a high-grade or glandular abnormality or cervical cancer (higher risk of significant cervical abnormality), 2,054 (79.4%) of which had histology performed within 6 months. Of the 2,054 histology tests performed within 6 months, 226 (11.0%) were

negative, 398 (19.4%) were low-grade, 1,393 (67.8%) were high-grade, and 31 (1.5%) were cervical cancer.

There were 9,031 primary screening tests that detected oncogenic HPV 16/18 for which the reflex LBC result was negative or low-grade (higher risk of significant cervical abnormality), 3,492 (38.7%) of which had histology performed within 6 months. While participants with this primary screening test result are recommended to have a colposcopy, a biopsy will only be performed if an abnormality is visible at colposcopy. Of the 3,492 histology tests performed within 6 months, 1,534 (43.9%) were negative, 1,277 (36.6%) were low-grade, 626 (17.9%) were high-grade, and 21 (0.6%) were cervical cancer.

There were 2,043 primary screening tests that detected oncogenic HPV 16/18 for which the reflex LBC result was a high-grade or glandular abnormality or cervical cancer (higher risk of significant cervical abnormality), 1,714 (83.9%) of which had histology performed within 6 months. Of the 1,714 histology tests performed within 6 months, 176 (10.3%) were negative, 198 (11.6%) were low-grade, 1,204 (70.2%) were high-grade, and 130 (7.6%) were cervical cancer.

Table 3.5.1: Histology performed within 6 months of a primary screening test, participants aged 25–74, screened in 2021

Primary screening test result			Histology result				
HPV test	LBC test	Tests	Tests	Negative	Low-grade	High-grade	Cancer
Not detected	Any	449,124	3,697	3,491	119	13	5
Not 16/18	Negative or low-grade	40,891	755	378	272	93	6
Not 16/18	High-grade or glandular	2,586	2,054	226	398	1,393	31
16/18	Negative or low-grade	9,031	3,492	1,534	1,277	626	21
16/18	High-grade or glandular	2,043	1,714	176	198	1,204	130

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

These findings demonstrate that the LBC result is a good predictor of the histology result.

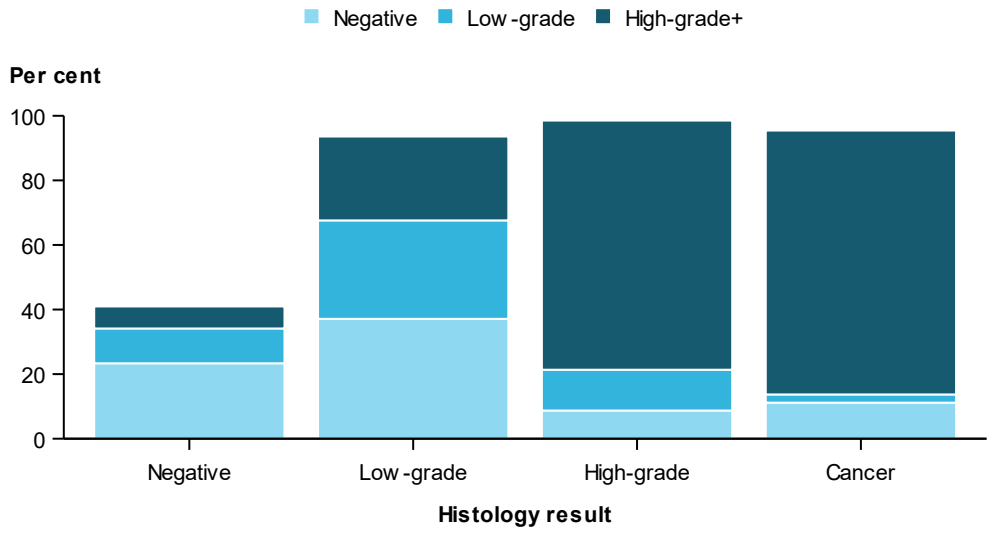
For primary screening tests performed in 2021, irrespective of HPV test result, 4,636 primary screening tests had an LBC that predicted a high-grade or glandular abnormality or cervical cancer, with 3,762 followed by histology within 6 months. Of these 3,762 histology tests, 2,761 (73.4%) had a histology result of high-grade cervical abnormality or cervical cancer.

Figure 3.5.1 shows the proportion of each of the histology results of ‘Negative’, ‘Low-grade’, ‘High-grade’ and ‘Cancer’ that were preceded by an LBC result of ‘Negative’, ‘Low-grade’, or ‘High-grade+’ (high-grade, cancer or glandular).

For the 11,770 histology tests that occurred within 6 months of a primary screening test:

- Negative histology was most frequently preceded by an HPV test that did not detect oncogenic HPV, and hence a reflex LBC was usually not performed. Where LBC was performed, negative histology was most frequently preceded by a negative LBC test (23.4% of negative histology tests were preceded by negative LBC).
- Low-grade histology was most frequently preceded by a negative LBC test (37.1%), followed by a low-grade LBC test (30.5%) and then a high-grade+ LBC test (26.0%).
- High-grade histology was most frequently preceded by a high-grade+ LBC test (77.2% of high-grade histology tests were preceded by a high-grade or higher LBC).
- Cervical cancer histology was most frequently preceded by a high-grade+ LBC test (81.7% of cervical cancer histology tests were preceded by a high-grade or higher LBC) (Figure 3.5.1).

Figure 3.5.1: Histology performed within 6 months of a primary screening test, by prior LBC test result, participants aged 25–74 screened in 2021



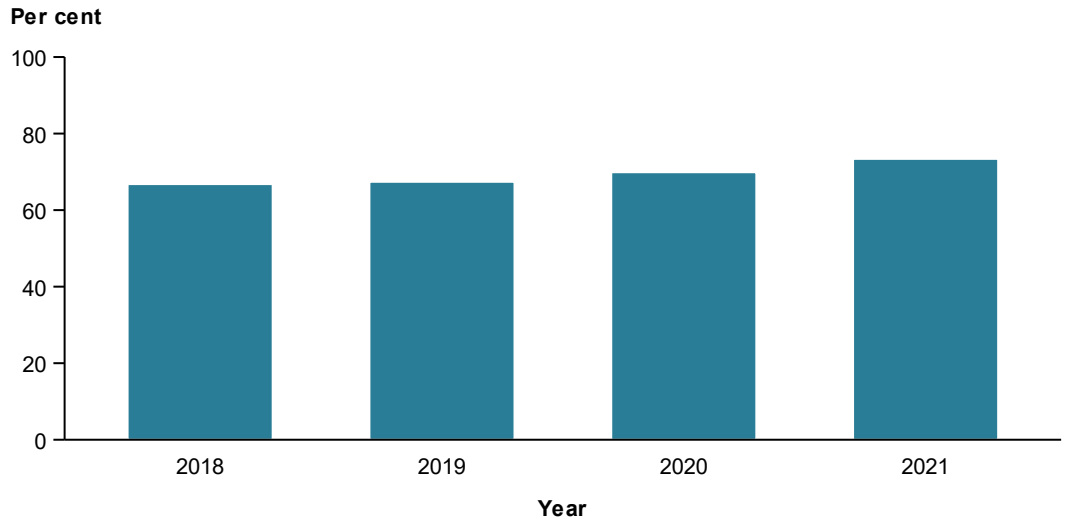
Note: Histology does not equal 100% as cases where LBC was not performed are included in calculations but excluded from this figure.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

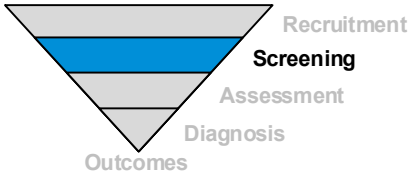
Correlation of screening results trends

The proportion of primary screening tests that had an LBC that predicted a high-grade or glandular abnormality or cervical cancer followed by histology within 6 months with a result of high-grade cervical abnormality or cervical cancer was 66.8% in 2018, increasing to 67.4% in 2019, to 69.8% in 2020, and increasing to 73.4% in 2021 (Figure 3.5.2).

Figure 3.5.2: Proportion of high-grade or glandular LBC tests followed by high-grade cervical abnormality or cervical cancer histology within 6 months, participants aged 25–74, 2018 to 2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A5.1.



Performance Indicator 6: Screening HPV test positivity

Summary of screening HPV test positivity data

Of the 480,977 valid primary screening HPV tests performed in 2022 in participants aged 25–74:

- 1.9% were positive for oncogenic HPV 16/18
- 8.4% were positive for oncogenic HPV (not 16/18)
- 10.3% were positive for oncogenic HPV (any)

Definition:

Percentage of valid screening HPV tests that are positive for oncogenic HPV in participants aged 25–74 in a calendar year.

Rationale:

Monitoring the positivity rate provides important information about a screening test. There are three measures of positivity relevant to the NCSP:

- any oncogenic HPV positivity is the proportion of valid HPV tests that are positive for any oncogenic HPV
- oncogenic HPV 16/18 positivity is the proportion of valid HPV tests that are positive for oncogenic HPV 16/18
- oncogenic HPV (not 16/18) positivity is the proportion of valid HPV tests that are positive for oncogenic HPV (not 16/18).

Screening HPV test positivity is calculated only for primary screening HPV tests. Follow-up HPV tests and HPV tests performed for other reasons are not included as these may be more likely to be positive than primary screening HPV tests. Unsatisfactory HPV tests are also excluded, as positivity is based only on valid primary screening HPV tests.

Data considerations:

HPV vaccination was introduced in Australia on 1 April 2007. As some HPV-vaccinated individuals are now at the age at which they are participating in cervical screening, it is necessary to consider the impact of HPV vaccination on screening HPV test positivity.

It is useful to distinguish between participants who were offered HPV vaccination (since these participants are more likely to be vaccinated against HPV), and those who were not. Date of birth was used to determine whether HPV vaccination had been offered. People born after 30 June 1980 were considered to have been offered HPV vaccination as these people were eligible for HPV vaccination when the school program commenced in April 2007 and the primary care catch up program commenced in July 2007. People born on or before 30 June 1980 were considered to have not been offered HPV vaccination, as these people were outside the eligible age for HPV vaccination.

The oncogenic HPV types against which participants are likely to have been vaccinated is also a highly relevant consideration. Before 2018, the HPV vaccine used was against oncogenic HPV types 16 and 18, which means that the majority of HPV-vaccinated participants will be protected against only these two oncogenic HPV types, with some limited cross protection against closely related types.

From 2018, an HPV vaccine effective against oncogenic HPV types 16, 18, 31, 33, 45, 52 and 58 was introduced. The additional HPV types included are the next 5 most common HPV types that cause cervical cancer after types 16 and 18. However, it will be some time before individuals vaccinated against these oncogenic HPV types commence cervical screening.

Results

In 2022, there were 480,977 valid primary screening HPV tests in participants aged 25–74.

Screening HPV test positivity was determined for participants aged 25–74, as well as for participants who had been offered or not offered HPV vaccination, according to their age.

Screening HPV test positivity was calculated as an overall positivity for any type of oncogenic HPV, as well as separately for HPV tests that were positive for oncogenic HPV 16/18 and those that were positive for oncogenic HPV (not 16/18).

Screening HPV test positivity results for these 9 permutations are shown in Table 3.6.1.

The results indicate that screening HPV test positivity for oncogenic HPV 16/18 was low, irrespective of age, with oncogenic HPV 16/18 detected in around 2% of primary screening HPV tests. While this was 1.9% in participants aged 25–74, screening HPV test positivity was slightly lower at 1.6% in participants offered HPV vaccination, compared with 2.2% in participants not offered HPV vaccination) (Table 3.6.1).

In contrast, screening HPV test positivity for oncogenic HPV (not 16/18) varied considerably depending on whether participants were of an age at which HPV vaccination was offered or not offered. Screening HPV test positivity was 12.3% of primary screening HPV tests for participants young enough to have been offered HPV vaccination and 4.4% in participants too old to have been offered HPV vaccination (Table 3.6.1).

Table 3.6.1: Screening HPV test positivity, by oncogenic HPV type, by age, 2022

	Screening HPV test positivity (%)		
Age	Oncogenic HPV 16/18 detected	Oncogenic HPV (not 16/18) detected	Oncogenic HPV (any type) detected
Target age group 25–74	1.9	8.4	10.3
Age indicates were offered HPV vaccination	1.6	12.3	13.9
Age indicates were not offered vaccination	2.2	4.4	6.5

(a) Participants born after 30 June 1980 were considered to have been offered HPV vaccination as these participants were eligible for the school or catch-up program during 2007.

(b) Participants born on or before 30 June 1980 were considered to have not been offered HPV vaccination, as these participants were outside the eligible age for HPV vaccination.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Higher screening HPV test positivity in participants who had been offered HPV vaccination seems counterintuitive, but is an expected result for screening HPV test positivity for oncogenic HPV (not 16/18), since the higher infection rates of HPV in younger participants (that thereafter decline with increasing age) would not be affected by HPV vaccination for these oncogenic HPV types, as only HPV types 16 and 18 were included in the HPV vaccine that the majority of these participants would have received (Brotherton et al. 2019).

Screening HPV test positivity results by age

Positivity of oncogenic HPV (not 16/18) shows the more typical pattern of HPV infection before HPV vaccination was introduced, with positivity of oncogenic (not 16/18) highest among the youngest participants, and decreasing with increasing age. Positivity was 27.8% in participants aged under 25, falling to 17.4% in participants aged 25–29 and 10.0% in those aged 30–34, continuing to fall thereafter to a low of 3.2% in participants aged 70–74 (Figure 3.6.1).

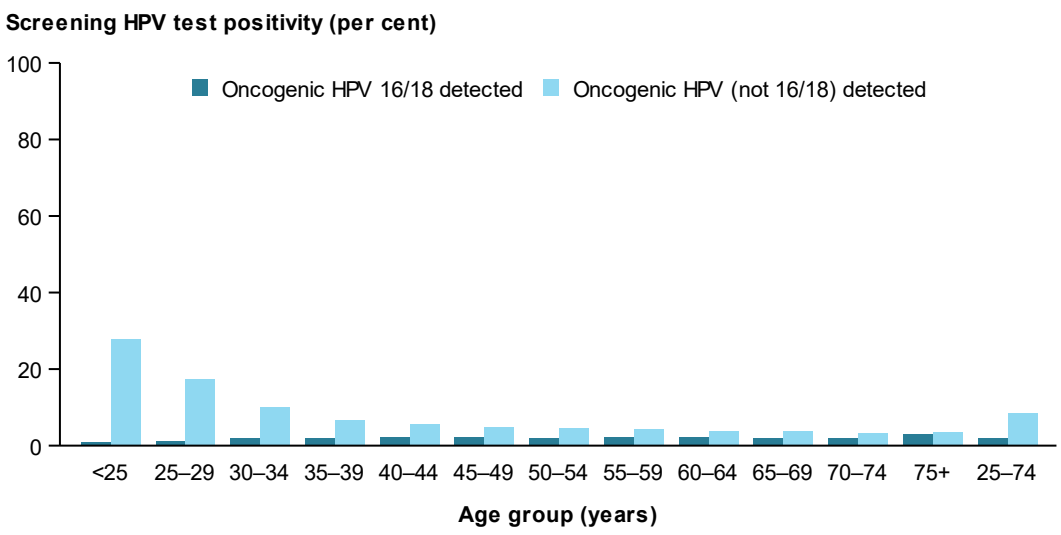
Oncogenic HPV types other than 16 and 18 would not have been included in the HPV vaccine administered to these participants, as this was only introduced to girls aged 12 and 13 from 2018.

In contrast, positivity of oncogenic HPV 16/18 was lowest in the youngest age groups, being 1.0% and 1.1% in participants aged under 25 and 25–29, respectively. Positivity was thereafter steady at around 2% for all age groups between 30–34 and 70–74 (Figure 3.6.1).

Oncogenic HPV types 16 and 18 have been included in the HPV vaccine administered to the younger of these participants, as this was introduced to girls aged 12 and 13 (and older age groups in a catch-up program) in 2007.

This has had an impact on the positivity of oncogenic HPV 16/18 in participants aged under 30 in particular, with positivity for participants aged <25 falling from 1.4% in 2021 to 1.0% in 2022 and positivity for participants aged 25–29 falling from 1.5% in 2021 to 1.1% in 2022.

Figure 3.6.1: Screening HPV test positivity, by oncogenic HPV type, by age, 2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A6.1.

Screening HPV test positivity trends

Trends in positivity over the years 2018 to 2022 for oncogenic HPV 16/18 and oncogenic HPV (not 16/18) are shown in Figure 3.6.2 separately for:

- participants aged 25–74
- participants whose age indicates that they were offered HPV vaccination
- participants whose age indicates that they were not offered HPV vaccination.

While there are differences across oncogenic HPV types and birth cohort, overall, the data for the target age group 25–74 demonstrate that screening HPV test positivity was higher for 2020 and 2021 than for 2018 and 2019, and then falling again between 2021 and 2022.

Positivity for oncogenic HPV 16/18 for participants aged 25–74 increased from 2.0–2.1% of valid primary screening HPV tests in 2018 and 2019 to 2.3% in 2020 and 2021, then decreased to 1.9% in 2022.

The decrease from 2.3% to 1.9% was mirrored in both participants who were offered HPV vaccination, for whom positivity decreased from 2.0% in 2021 to 1.6% in 2022 and in participants who were not offered HPV vaccination, for whom positivity decreased from 2.6% in 2021 to 2.2% in 2022 (Figure 3.6.2).

Positivity of oncogenic HPV (not 16/18) for participants aged 25–74 increased from 6.5–6.7% of valid primary screening HPV tests in 2018 and 2019 to 8.2% in 2020 and 8.8% of valid primary screening HPV tests in 2021, then decreased to 8.4% in 2022.

As for oncogenic HPV 16/18, the decrease from 8.8% to 8.4% for oncogenic HPV (not 16/18) was mirrored in both participants who were offered HPV vaccination, for whom positivity decreased from 12.7% in 2021 to 12.3% in 2022 and in participants who were not offered HPV vaccination, for whom positivity decreased from 4.7% in 2021 to 4.4% in 2022 (Figure 3.6.2).

Many factors affect positivity, including the proportion of participants who have never screened or who are under screened, with these participants experiencing higher rates of HPV infection, which would lead to higher positivity.

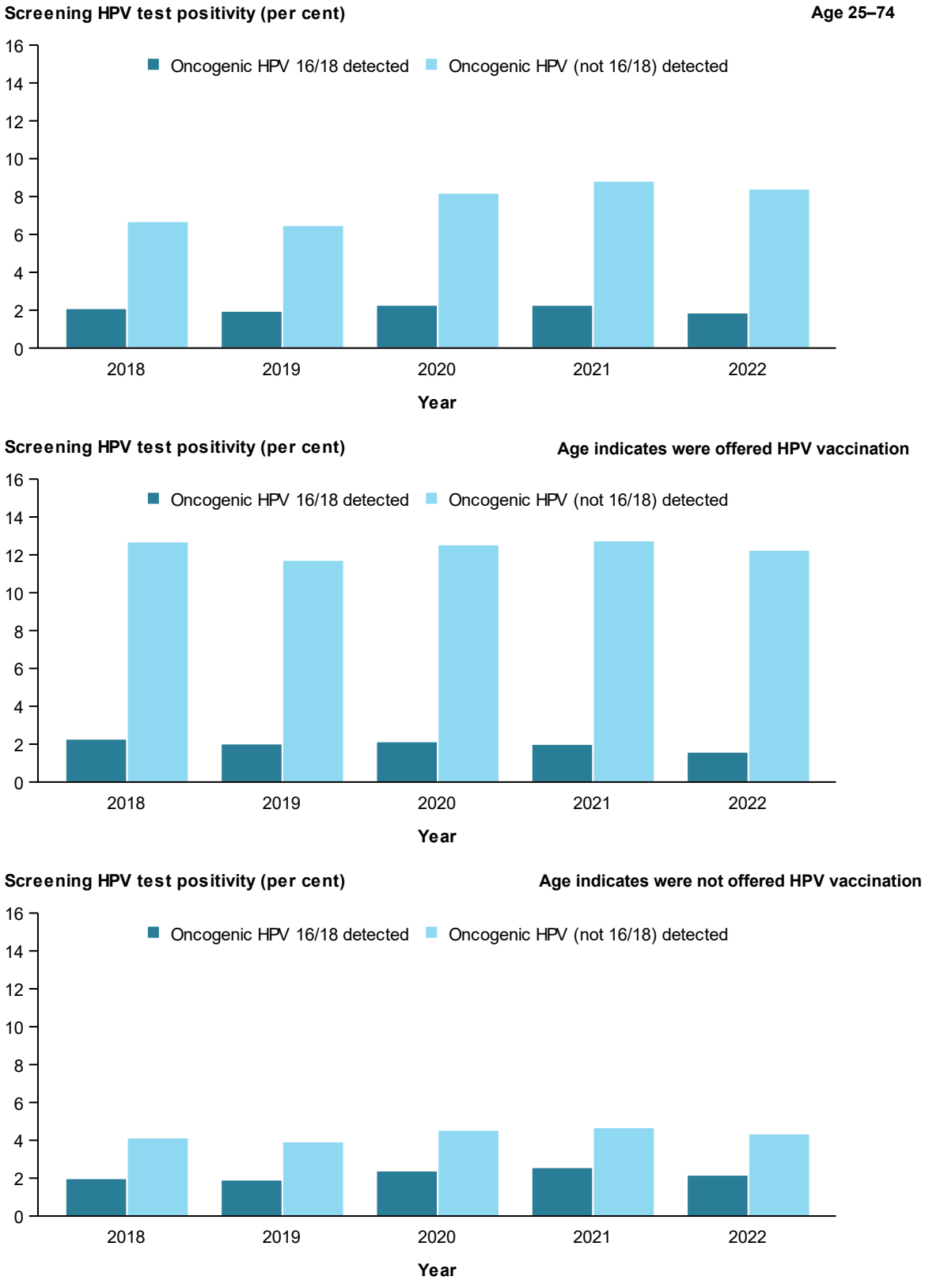
Positivity for the birth cohort offered HPV vaccination is also affected by the proportion of participants that are of a younger age within this birth cohort, as some participants within this birth cohort – by virtue of their age – will experience higher rates of HPV infection than others, which will in turn impact the overall positivity for this cohort of participants.

As introduced earlier in this report, the first 2 years of the renewed NCSP was a transition period during which participants who had had a Pap test under the previous NCSP became due for their first screening HPV test, after which time they moved to a 5-yearly screening interval. This means that screening HPV tests in 2020, 2021, and the majority of 2022 will comprise tests performed for participants who are overdue for their first screening HPV test, and those who are newly eligible for cervical screening – mostly due to turning 25.

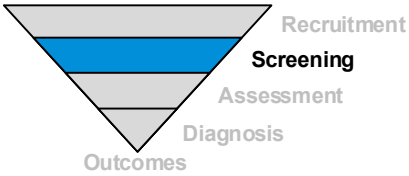
The higher screening HPV test positivity observed in 2020 and 2021 compared to 2018 and 2019 is due to 2020 and 2021 having a higher proportion of participants overdue for screening (or who have never previously screened), since, as noted above, participants who have never screened or who are under screened experience higher rates of HPV infection, leading to higher HPV test positivity.

The small decrease in positivity in 2022 may be due to the inclusion of participants rescreening for the first time in the last few months of 2022 after their first HPV test in December 2017 or early 2018. This would decrease the proportion of participants in 2022 that have never screened or who are under screened, which may be enough of a difference to result in the noted decrease in positivity compared to 2021.

Figure 3.6.2: Screening HPV test positivity trends, by birth cohort, by year, 2018 to 2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A6.3.



Performance Indicator 7: Cervical cancer diagnosed after a low risk screening test result

Summary false negative rate of the screening HPV test data

No data reported for this performance indicator.

Definition:

Percentage of participants aged 25–74 who are diagnosed with cervical carcinoma within 5 years of a screening HPV test that did not detect oncogenic HPV.

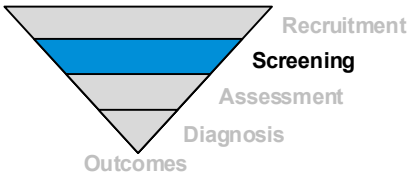
Rationale:

This measures the false negative rate of a low risk primary screening HPV test result.

Data considerations:

Calculation of this performance indicator requires linkage between data from the NCSR and data from the Australian Cancer Database (ACD) and more than 5 years to have passed since the inception of the renewed NCSP to allow this performance indicator to be measured as per the definition.

Data are not yet available to support the reporting of this performance indicator



Performance Indicator 8: LBC test in self-collection participants positive for oncogenic HPV (not 16/18)

Summary data for participants who have an LBC test after a self-collected sample in which oncogenic HPV (not 16/18) is detected

In 2022, of the 3,392 participants aged 25–74 who self-collected and whose HPV test was positive for oncogenic HPV (not 16/18), 66.5% had an LBC test within 3 months and 77.4% had an LBC test within 6 months.

Definition:

Percentage of participants aged 25–74 who have an LBC test after a self-collected screening HPV test positive for oncogenic HPV (not 16/18) in a calendar year.

Rationale:

Participants who self-collect their screening test and test positive for oncogenic HPV (not 16/18) are recommended to have a practitioner-collected sample within 6 weeks so that an LBC test can be performed. This indicator monitors compliance with this recommendation within 3 months, and within 6 months, by which time it is considered that most participants would have been able to attend an appointment with a practitioner.

Guide to interpretation:

A higher percentage is better.

Data considerations:

As a self-collected sample is not suitable for reflex LBC, if the HPV test detects oncogenic HPV (not 16/18), the participant needs to have a separate sample collected for a reflex LBC test to determine whether they are considered either intermediate risk or higher risk of significant cervical abnormality.

Under the renewed NCSP, prior to 1 July 2022, when all participants became eligible for self-collection, only those aged 30 or over who had never participated in cervical screening or were 2 years or more overdue for cervical screening were eligible to self-collect a vaginal sample for their HPV test. This means that the data for 2022 will comprise 6 months where self-collection was restricted and 6 months where self-collection was not restricted.

Previously, this performance indicator only measured the proportion of participants who had an LBC test within 6 months. From this report onwards, this performance indicator now measures both the proportion of participants who have an LBC test within 3 months and the proportion who have an LBC test within 6 months.

Results

In 2022, there were 3,392 participants aged 25–74 who self-collected a sample for their primary screening HPV test and were found to be positive for oncogenic HPV (not 16/18). Of these 3,392 participants, 66.5% had an LBC test within 3 months and 77.4% had an LBC test within 6 months of their primary screening HPV test.

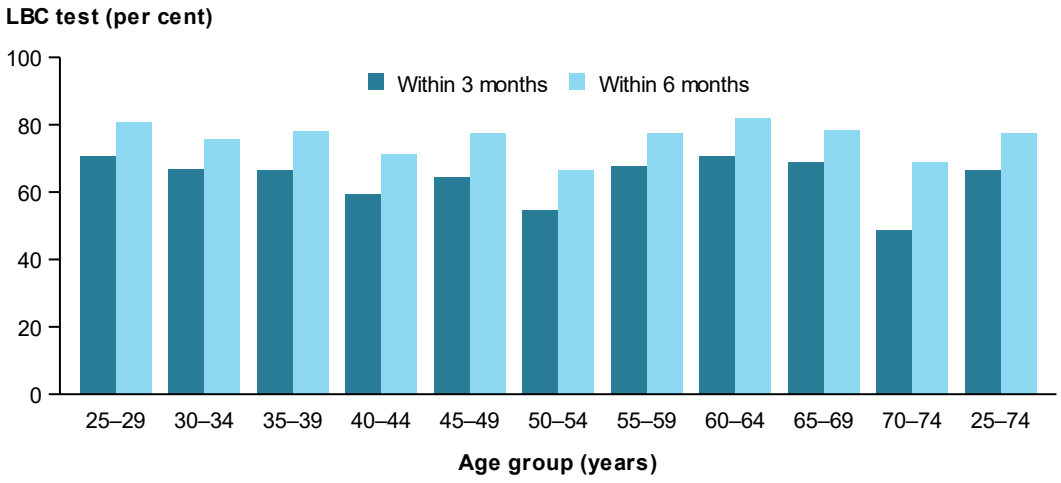
LBC test in self-collection participants positive for oncogenic HPV (not 16/18) by age

The higher number of participants who self-collected their sample since 1 July 2022 allows 5-year age groups to be reported.

The proportion of participants who self-collected a sample for their primary screening HPV test that detected oncogenic HPV (not 16/18) who had an LBC test within 3 months was highest for participants aged 25–29 and 60–64 at 70.5%, and lowest for participants aged 70–74 at 48.5% (Figure 3.8.1).

The proportion who had an LBC test within 6 months was highest for participants aged 25–29 and 60–64 at 80.7% and 81.9%, respectively, and lowest for participants aged 50–54 and 70–74 at 66.5% and 68.9%, respectively (Figure 3.8.1).

Figure 3.8.1: Proportion of participants who self-collected a sample for their primary screening HPV test that detected oncogenic HPV (not 16/18) who had an LBC test within 3 months and within 6 months, by age, 2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A8.1

LBC test in self-collection participants positive for oncogenic HPV (not 16/18) by month

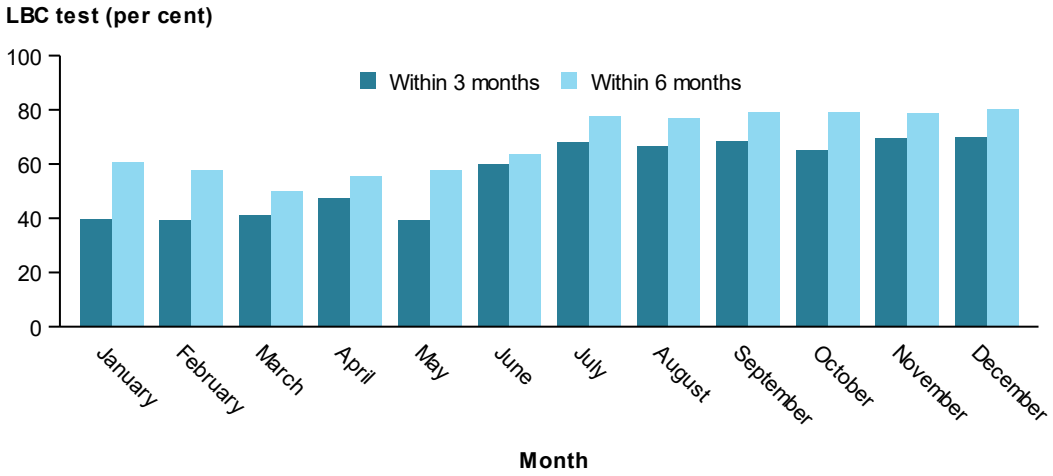
The proportion of participants who self-collected a sample for their primary screening HPV test that detected oncogenic HPV (not 16/18) who had an LBC test within 3 months and within 6 months was reported by month to investigate any impact of the removal of eligibility criteria for self-collection from 1 July 2022.

The proportion of these participants who had an LBC test within 3 months and within 6 months was notably higher from July to December 2022 than from January to June 2022 (Figure 3.8.2), indicating that compliance with the recommendation to have a practitioner-collected sample within 6 weeks so that an LBC test can be performed is higher when all

participants are able to self-collect than when self-collection was limited to under screened and never screened.

Comparing these results for January–June 2022 and July–December 2022, the proportion of participants who self-collected a sample for their primary screening HPV test that detected oncogenic HPV (not 16/18) who had an LBC test within 3 months was 45.9% for January–June 2022 and 68.0% for July–December 2022. The proportion who had an LBC test within 6 months was 58.1% for January–June 2022 and 78.8% for July–December 2022.

Figure 3.8.2: Proportion of participants who self-collected a sample for their primary screening HPV test that detected oncogenic HPV (not 16/18) who had an LBC test within 3 months and within 6 months, participants aged 25–74, by month, 2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A8.2

LBC test in self-collection participants positive for oncogenic HPV (not 16/18) trends

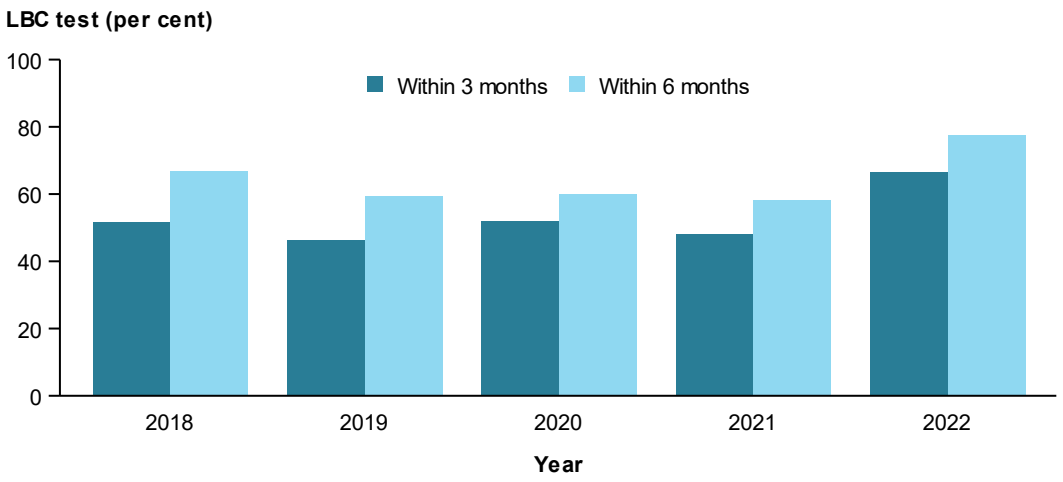
The proportion of participants who self-collected a sample for their primary screening HPV test that detected oncogenic HPV (not 16/18) and who had an LBC test within 3 months and within 6 months was similar over the years 2018 to 2021, with an increase in 2022.

For participants who had an LBC test within 3 months, this was around 50% for the years 2018 to 2021, before increasing to 66.5% in 2022 (Figure 3.8.3).

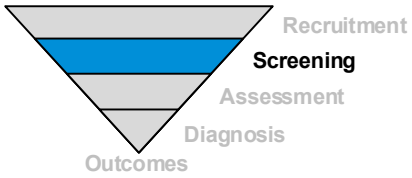
For participants who had an LBC test within 6 months, this was around 60% for the years 2018 to 2021, before increasing to 77.4% in 2022 (Figure 3.8.3).

Note that the number of participants who self-collected a sample in 2018 was very low, so data for this year are not as robust as later years.

Figure 3.8.3: Proportion of participants who self-collected a sample for their primary screening HPV test that detected oncogenic HPV (not 16/18) who had an LBC test within 3 months and within 6 months, participants aged 25–74, 2018 to 2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A8.3



Performance Indicator 9: Colposcopy in self-collection participants positive for oncogenic HPV 16/18

Summary data for participants who have a colposcopy after a self-collected sample in which oncogenic HPV 16/18 is detected

In 2022, of the 957 participants aged 25–74 who self-collected and whose HPV test was positive for oncogenic HPV 16/18, 56.7% had a colposcopy within 3 months and 76.7% had a colposcopy within 6 months.

Definition:

Percentage of participants aged 25–74 who have a colposcopy after a self-collected screening HPV test positive for oncogenic HPV 16/18 in a calendar year.

Rationale:

Participants who self-collect and who test positive for oncogenic HPV 16/18 are recommended to have a colposcopy within 8 weeks. This indicator monitors compliance with this recommendation within 3 months, and within 6 months, by which time it is considered that most participants would have been able to attend an appointment with a colposcopist.

Guide to interpretation:

A higher percentage is better.

Data considerations:

If the HPV test result detects oncogenic HPV 16/18, the participant is considered higher risk and referred for colposcopy. Any colposcopy or histology test performed within 3 months or within 6 months is included, as a histology test is an indication of a colposcopy.

Under the renewed NCSP, prior to 1 July 2022, when all participants became eligible for self-collection, only those aged 30 or over who had never participated in cervical screening or were 2 years or more overdue for cervical screening were eligible to self-collect a vaginal sample for their HPV test. This means that the data for 2022 will comprise 6 months where self-collection was restricted and 6 months where self-collection was not restricted.

Previously, this performance indicator only measured the proportion of participants who had a colposcopy within 6 months. From this report onwards, this performance indicator now measures both the proportion of participants who have a colposcopy within 3 months and the proportion who have a colposcopy within 6 months.

This performance indicator is based on primary screening tests performed in 2022. This allows 6 months to 30 June 2023 to know whether a colposcopy or histology occurred. However, the further 6 months to 31 December 2023 to ensure that colposcopy and histology data to 30 June 2022 are complete has not been applied in the interest of reporting the most up-to-date self-collection data available. This means that the data for 2022 could be an underestimate, and the true proportion of these participants having colposcopy within 6 months may be higher than is reported here.

Results

In 2022, there were 957 participants aged 25–74 who self-collected a sample for their primary screening HPV test and were found to be positive for oncogenic HPV 16/18. Of these 957 participants, 56.7% had a colposcopy within 3 months and 76.7% had a colposcopy within 6 months of their primary screening HPV test.

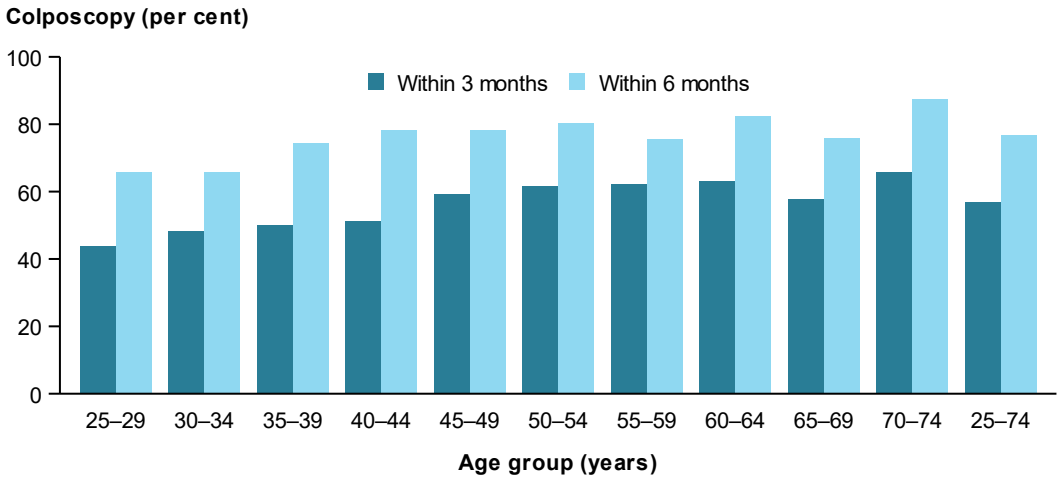
Colposcopy in self-collection participants positive for oncogenic HPV 16/18 by age

The higher number of participants who self-collected their sample since 1 July 2022 allows 5-year age groups to be reported.

The proportion of participants who self-collected a sample for their primary screening HPV test that detected oncogenic HPV 16/18 who had a colposcopy within 3 months was highest for participants aged 70–74 at 65.6%, and lowest for participants aged 25–29 at 43.8% (Figure 3.9.1).

The proportion who had a colposcopy within 6 months was highest for participants aged 70–74 at 87.5%, and lowest for participants aged 25–29 and 30–34 at 65.6% and 65.9%, respectively (Figure 3.9.1).

Figure 3.9.1: Proportion of participants who self-collected a sample for their primary screening HPV test that detected oncogenic HPV 16/18 who had a colposcopy within 3 months and within 6 months, by age, 2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A9.1

Colposcopy in self-collection participants positive for oncogenic HPV 16/18 by month

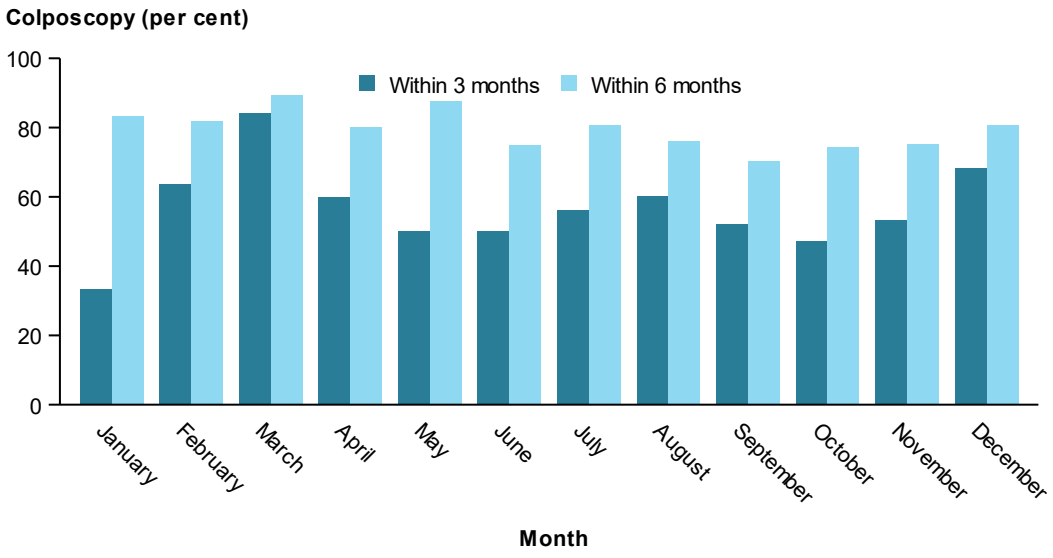
The proportion of participants who self-collected a sample for their primary screening HPV test that detected oncogenic HPV 16/18 who had a colposcopy within 3 months and within 6 months was reported by month to investigate any impact of the removal of eligibility criteria for self-collection from 1 July 2022.

There was no clear trend for the proportion of participants who had a colposcopy within 3 months and within 6 months (Figure 3.9.2), although the numbers were quite small over the months January to June 2022, so the data were not as robust as for July to December 2022.

Comparing these results for January–June 2022 and July–December 2022, the proportion of participants who self-collected a sample for their primary screening HPV test that detected oncogenic HPV 16/18 who had a colposcopy within 3 months was 60.9% for January–June 2022 and 56.4% for July–December 2022. The proportion who had a colposcopy within 6 months was 82.6% for January–June 2022 and 76.2% for July–December 2022.

These results indicate that there is no apparent difference in compliance with the recommendation to have a colposcopy within 8 weeks following the removal of criteria limiting access to self-collection to the under screened and never screened eligible population.

Figure 3.9.2: Proportion of participants who self-collected a sample for their primary screening HPV test that detected oncogenic HPV 16/18 who had a colposcopy within 3 months and within 6 months, participants aged 25–74, by month, 2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A9.2

Colposcopy in self-collection participants positive for oncogenic HPV 16/18 trends

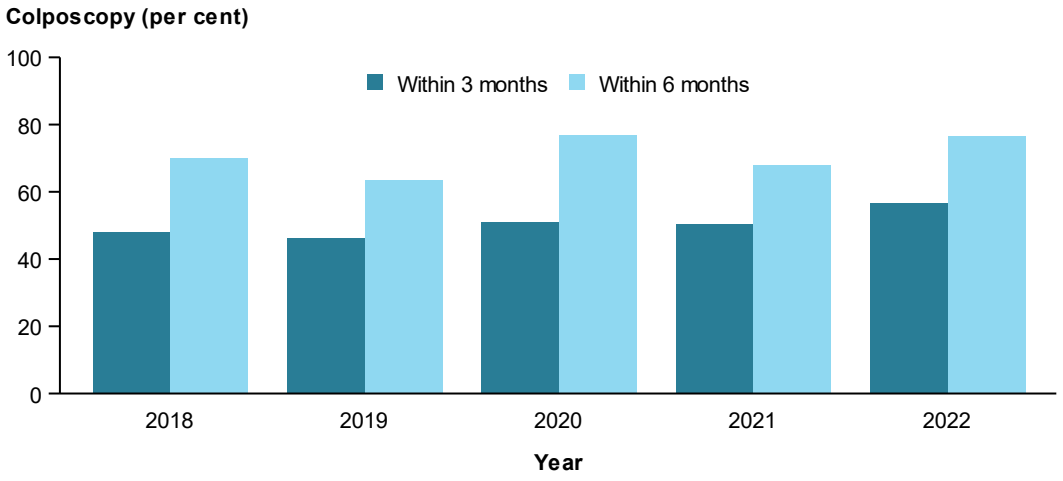
There was no clear trend in the proportion of participants who self-collected a sample for their primary screening HPV test that detected oncogenic HPV 16/18 and who had a colposcopy within 3 months and within 6 months.

For participants who had a colposcopy within 3 months, this ranged between 46.2% and 56.7% over the years 2018 to 2022 (Figure 3.9.3).

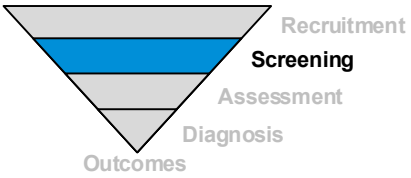
For participants who had an LBC test within 6 months, this ranged between 63.5% and 77.0% over the years 2018 to 2022 (Figure 3.9.3).

Note that the number of participants who self-collected a sample in 2018 was very low, so data for this year are not as robust as later years.

Figure 3.9.3: Proportion of participants who self-collected a sample for their primary screening HPV test that detected oncogenic HPV 16/18 who had a colposcopy within 3 months and within 6 months, participants aged 25–74, 2018 to 2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A9.3



Performance Indicator 10: Adherence to recommendation for follow-up

Summary adherence to recommendation for follow-up data

50.7% of participants aged 25–74 who had a primary screening episode in 2021 that indicated they were of intermediate risk had a follow-up HPV test between 9 and 15 months, indicating adherence with the recommendation for follow-up.

56.5% of participants aged 25–74 who had a follow-up episode in 2021 that indicated they were of intermediate risk had a follow-up HPV test between 9 and 15 months, indicating adherence with the recommendation for follow-up.

Definition:

Percentage of participants aged 25–74 who have an intermediate risk screening episode in a calendar year who have a follow-up HPV test between 9 and 15 months.

Percentage of participants aged 25–74 who have an intermediate risk follow-up episode in a calendar year who have a follow-up HPV test between 9 and 15 months.

Rationale:

Participants who test positive for oncogenic HPV (not 16/18) and have a negative or pLSIL/ LSIL reflex LBC test result are considered to be of intermediate risk for this primary screening episode, and are recommended to have a follow-up HPV test in 12 months. This indicator monitors compliance with this recommendation for a participant's first follow-up HPV test 12 months after their intermediate risk primary screening episode (allowing 3 months either side of the recommended 12 months).

Participants who test positive for oncogenic HPV (not 16/18) and have a negative or pLSIL/ LSIL reflex LBC test result at their first follow-up HPV test are considered to be of intermediate risk for this first follow-up episode, and are recommended to have a second follow-up HPV test in another 12 months. This indicator monitors compliance with this recommendation for a participant's second follow-up HPV test 12 months after their intermediate risk follow-up episode (allowing 3 months either side of the recommended 12 months).

Guide to interpretation:

A higher percentage is better.

Data considerations:

Participants who have a primary screening test that indicates they are at intermediate risk of a significant cervical abnormality require a follow-up HPV test 12 months after their primary screening test to determine whether they have cleared the HPV infection and have become low risk, or if the infection has persisted.

Prior to 1 February 2021, only one follow-up HPV test was performed 12 months following an intermediate risk primary screening episode, with the participant deemed to be either low risk (no oncogenic HPV detected) or higher risk (any oncogenic HPV detected). Since 1 February

2021, if the first follow-up HPV test detects oncogenic HPV (not 16/18) and the reflex LBC is negative or low-grade, then the participant remains at intermediate risk, and a second follow-up HPV test is performed 12 months after the first, with the participant then deemed to be either low risk (no oncogenic HPV detected) or higher risk (any oncogenic HPV detected).

These data measure compliance with the:

- first follow-up HPV test 12 months after an intermediate risk screening episode
- second follow-up HPV test 12 months after an intermediate risk follow-up episode.

The change in the screening pathway for intermediate risk participants from 1 February 2021 means comparisons with previous years should not be made.

Calculation of this performance indicator requires 15 months to have passed after the end of the reporting period to know if participants had their follow-up HPV test between 9 and 15 months after their screening episode.

> This performance indicator is based on primary screening episodes and follow-up episodes performed in 2021. This allows 15 months to 31 March 2023 to know whether a follow-up HPV test occurred as recommended.

Results

Adherence to recommendation for follow-up after intermediate risk screening episode

There were 39,309 participants aged 25–74 who had a primary screening episode in 2021 that indicated they were at intermediate risk of a significant cervical abnormality.

Of these intermediate risk participants, 50.7% had a follow-up HPV test between 9 and 15 months, indicating adherence with the recommendation for follow-up. This range allows 3 months either side of 12 months for participants who may have their follow-up HPV test before or after 12 months, but still within an appropriate length of time.

Figure 3.10.1 shows the distribution of follow-up HPV tests after a primary screening episode of intermediate risk. Compliance with the 12-month recommendation was highest at 12–13 months after the screening episode, with 10.3% of intermediate risk participants having a follow-up HPV test at 12 months and 16.5% of intermediate risk participants having a follow-up HPV test at 13 months after an intermediate risk screening episode.

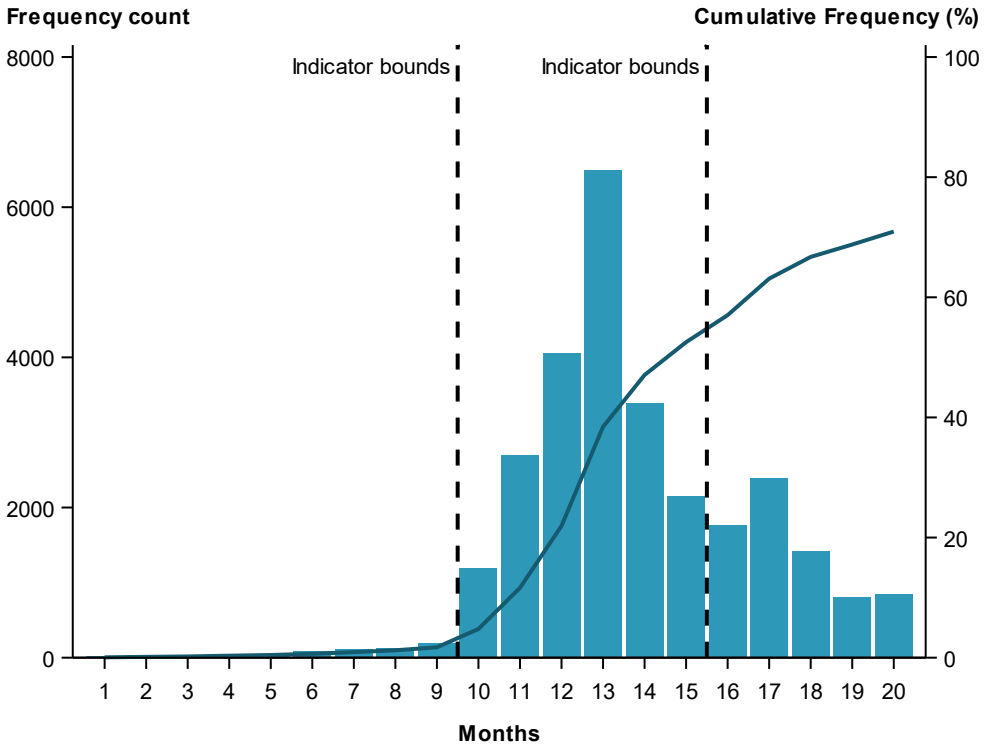
At 21 months after an intermediate risk primary screening episode, 24.3% of participants had not had a follow-up HPV test (Figure 3.10.1).

Adherence to recommendation for follow-up after intermediate risk screening episode by age

The proportion of participants who had a follow-up HPV test between 9 and 15 months after their intermediate risk primary screening episode is shown by age in Figure 3.10.2.

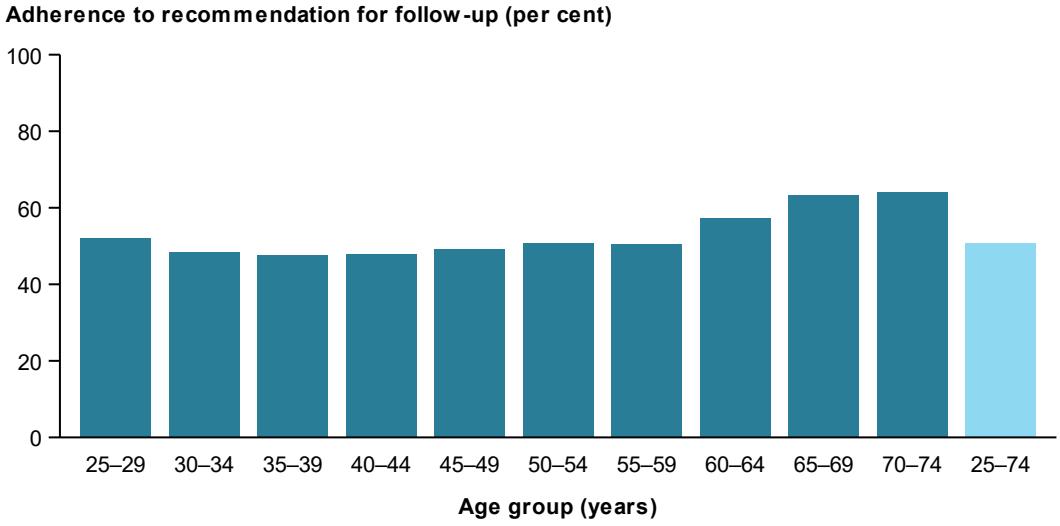
Adherence to recommendation for follow-up was 52.0% of participants aged 25–29, decreasing to between just under 50% for age groups 30–34 to 45–49. Adherence thereafter increased with increasing age, to around 51% for participants aged 50–59, 57.3% for participants aged 60–64, 63.2% for participants aged 65–69, and to 64.1% for participants aged 70–74 (Figure 3.10.2).

Figure 3.10.1: Distribution of follow-up HPV tests after intermediate risk screening episode, participants aged 25–74, 2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A10.1.

Figure 3.10.2: Adherence to recommendation for follow-up after intermediate risk screening episode, by age, 2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A10.2.

Adherence to recommendation for follow-up after intermediate risk follow-up episode

Prior to 2021, follow-up screening episodes were defined as those with a reason for HPV test of 'Follow-up HPV test'. From 2021, to accommodate the introduction of first follow-up episodes and second follow-up episodes, first follow-up episodes are defined as those with a reason for HPV test of 'Follow-up HPV test' and an intermediate risk screening episode with a recommendation of 'Repeat HPV test in 12 months' within the last 6 to 21 months.

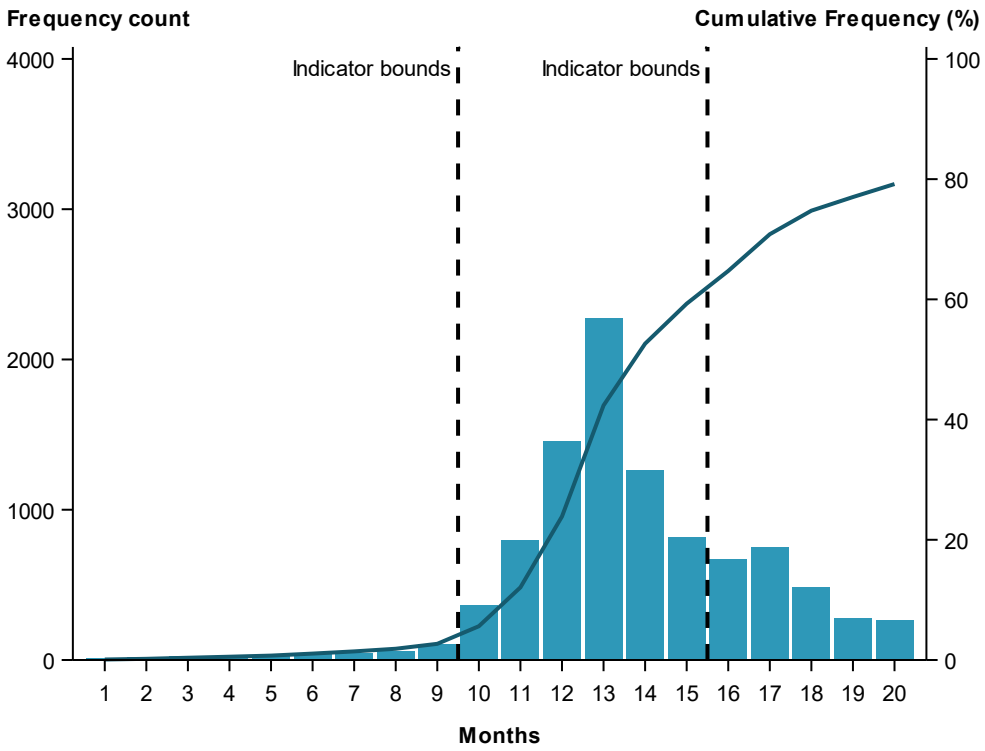
There were 12,299 participants aged 25–74 who had a follow-up episode in 2021 that indicated they were at intermediate risk of a significant cervical abnormality.

Of these intermediate risk participants, 56.5% had a follow-up HPV test between 9 and 15 months, indicating adherence with the recommendation for follow-up. This range allows 3 months either side of 12 months for participants who may have their follow-up HPV test before or after 12 months, but still within an appropriate length of time.

Figure 3.10.3 shows the distribution of follow-up HPV tests after a follow-up episode of intermediate risk. Compliance with the 12-month recommendation was highest at 12–14 months after the follow-up episode, with 11.8% of intermediate risk participants having a follow-up HPV test at 12 months, 18.5% having a follow-up HPV test at 13 months, and 10.3% having a follow-up HPV test at 14 months after their follow-up episode.

At 21 months after an intermediate risk follow-up episode, 16.0% of participants had not had a follow-up HPV test (Figure 3.10.3).

Figure 3.10.3: Distribution of follow-up HPV tests after intermediate risk follow-up episode, participants aged 25–74, 2021



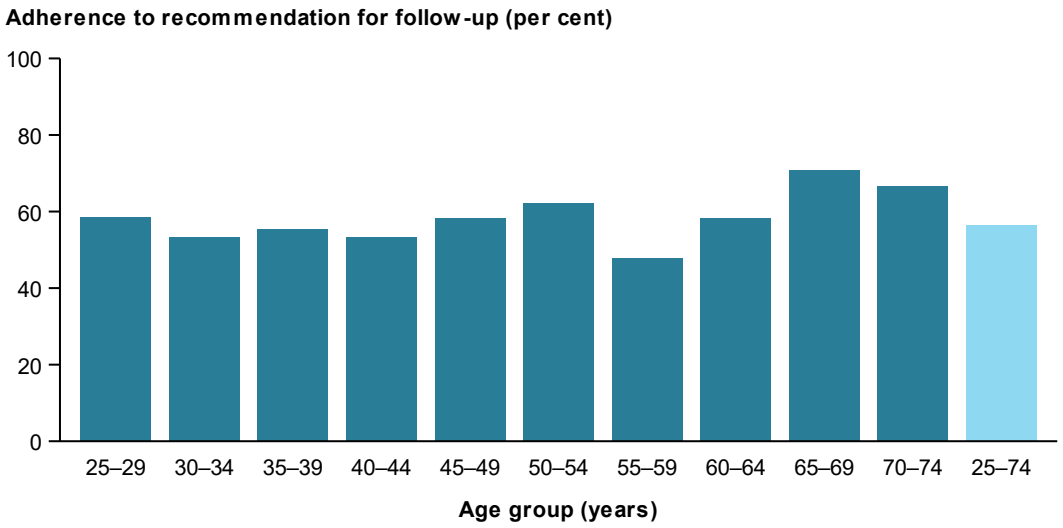
Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A10.4.

Adherence to recommendation for follow-up after intermediate risk follow-up episode by age

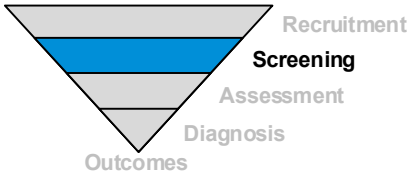
The proportion of participants at intermediate risk who had a follow-up HPV test between 9 and 15 months after their follow-up episode is shown by age in Figure 3.10.4.

Adherence to recommendation for follow-up ranged between 47.9% for participants aged 55–59 and 70.7% for participants aged 65–69 (Figure 3.10.4).

Figure 3.10.4: Adherence to recommendation for follow-up after intermediate risk follow-up episode, by age, 2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A10.5.



Performance Indicator 11: Follow-up results

Summary follow-up results data

Of the 25,666 first follow-up episodes in 2022 in participants aged 25–74:

- 38.9% were low risk
- 55.2% were intermediate risk
- 4.9% were higher risk
- 1.1% could not be assigned a risk

Of the 19,524 second follow-up episodes in 2022 in participants aged 25–74:

- 30.7% were low risk
- 69.2% were higher risk
- 0.1% could not be assigned a risk

Definition:

Percentage of follow-up episodes in participants aged 25–74 in each risk category in a calendar year.

Rationale:

Follow-up results are the follow-up HPV test result and reflex LBC (where indicated) that occur 12 months after an intermediate risk screening episode result, or 12 months after an intermediate risk follow-up episode result. Distribution of follow-up episode results is a key measure for the screening program and any changes in these distributions over time will require investigation within the broader context of the screening program. For this reason, follow-up results are based on test risk, not participant risk.

This indicator is reported separately for first follow-up episodes and second follow-up episodes.

The change in the screening pathway for intermediate risk participants from 1 February 2021 means comparisons with previous years should not be made.

Data considerations:

Prior to 1 February 2021, only one follow-up HPV test was performed 12 months following an intermediate risk primary screening episode, with the participant deemed to be either low risk (no oncogenic HPV detected) or higher risk (any oncogenic HPV detected). Since 1 February 2021, if the first follow-up HPV test detects oncogenic HPV (not 16/18) and the reflex LBC is negative or low-grade, then the participant remains at intermediate risk, and a second follow-up HPV test is performed 12 months after the first, with the participant deemed to be either low risk (no oncogenic HPV detected) or higher risk (any oncogenic HPV detected).

In the screening pathway, characteristics of participants including age, screening history, and Indigenous status can result in a participant with an intermediate risk follow-up episode being managed as higher risk instead of intermediate risk.

However, this indicator looks only at the risk of the follow-up episode based on the follow-up HPV test result and, where indicated, the LBC test result, without considering characteristics of the participants. The result of this is that there are a number of intermediate risk follow-up episodes where the participant will instead be managed as higher risk due to their age, screening history, or Indigenous status.

This report includes a breakdown of the risk of both first and second follow-up episodes.

Guide to interpretation:

From 1 February 2021, there are three risk categories (low, intermediate, and higher) for the first follow-up episode 12 months after an intermediate risk primary screening episode. The assigned risk category is determined by a combination of the follow-up HPV test result and, where indicated, the LBC test result. Risk is defined as the risk of a significant cervical abnormality. Determination of risk is illustrated in the screening pathway (Figure 2.1).

- A first follow-up HPV test that does not detect oncogenic HPV indicates low risk, and no reflex LBC is performed.
- A first follow-up HPV test that detects oncogenic HPV 16/18 indicates higher risk, and while reflex LBC is performed, the outcome of this test does not affect the risk.
- A first follow-up HPV test that detects oncogenic HPV (not 16/18) does not indicate a risk on its own, but requires reflex LBC to be performed to determine whether risk remains as intermediate or becomes higher risk.

In some cases, a first follow-up HPV test that does not detect oncogenic HPV is followed by an LBC, despite this not being indicated. These episodes have been allocated a risk according to their LBC test result, which is intermediate or higher if the LBC is not negative.

There are also some first follow-up episodes for which a risk cannot be allocated, usually due to unsatisfactory tests. Unsatisfactory HPV tests that are followed by an LBC are only allocated a risk if the LBC indicates a high-grade abnormality, glandular abnormality, or cancer (higher risk).

A reflex LBC is only indicated when the first follow-up HPV test detects oncogenic HPV. LBC test results are the same as Pap test results from the previous NCSP. These are:

- negative (no abnormality detected)
- low-grade abnormality (possible or definite low-grade squamous intraepithelial lesion)
- high-grade abnormality (possible or definite high-grade squamous intraepithelial lesion or squamous cell carcinoma)
- glandular abnormality (possible or definite glandular abnormality or adenocarcinoma)

The reflex LBC can also be unsatisfactory for evaluation.

From 1 February 2021, there are two risk categories (low and higher) for the second follow-up episode 12 months after an intermediate risk follow-up episode that are determined by the second follow-up HPV test result. Risk is defined as the risk of a significant cervical abnormality. Determination of risk is illustrated in the screening pathway (Figure 2.1).

- A second follow-up HPV test that does not detect oncogenic HPV indicates low risk, and no reflex LBC is performed.
- A second follow-up HPV test that detects any oncogenic HPV indicates higher risk, and while reflex LBC is performed, the outcome of this test does not affect the risk.

Prior to 2021, follow-up screening episodes were defined as those with a reason for HPV test of 'Follow-up HPV test'. From 2021, to accommodate the introduction of first follow-up episodes and second follow-up episodes, first follow-up episodes are defined as those with a reason for HPV test of 'Follow-up HPV test' and an intermediate risk *screening* episode with a recommendation of 'Repeat HPV test in 12 months' within the last 6 to 21 months; second follow-up episodes are defined as those with a reason for HPV test of 'Follow-up HPV test' and an intermediate risk *follow-up* episode with a recommendation of 'Repeat HPV test in 12 months' within the last 6 to 21 months.

These additional restrictions result in the number of follow-up episodes being fewer than reported in previous years, but are necessary to distinguish between the first and second follow-up episodes.

Results

First follow-up episodes

In 2022, there were 25,666 first follow-up episodes that occurred in participants in the target age group 25–74. These episodes were assigned to one of the three risk categories of low, intermediate, or higher (or were unable to be assigned to a risk category) based on the combination of the first follow-up HPV test result and, where indicated, the LBC test result. This is explained in the 'Guide to interpretation' for this performance indicator.

Overall, of the 25,666 first follow-up episodes in 2022 in participants aged 25–74:

- 38.9% were low risk
- 55.2% were intermediate risk
- 4.9% were higher risk
- 1.1% could not be assigned a risk.

First follow-up episodes by HPV ± LBC test results

In Table 3.11.1, the combination of first follow-up HPV test result and LBC test result is shown for each first follow-up episode.

Each combination has been colour-coded in this table according to risk of significant cervical abnormality based on the first follow-up HPV test result and LBC test result only.

As outlined in the 'Data considerations' section, allocation of risk in this table does not consider the characteristics of intermediate risk participants (age, screening history, and Indigenous status) that indicate that the participant will instead be managed as higher risk.

Instead, this indicator looks only at the risk of the first follow-up episode based on the first follow-up HPV test result and, where indicated, the LBC test result, and not the risk of the participant, which may sometimes be higher risk instead of intermediate risk.

In Table 3.11.1, low risk is indicated by light blue shading, intermediate risk by medium blue shading, and higher risk by darker blue shading. First follow-up episodes for which a risk could not be assigned have no shading.

Table 3.11.1: First follow up HPV ± LBC test results, participants aged 25–74, 2022

Reflex LBC test result	First follow-up HPV test result			
	Unsatisfactory	Oncogenic HPV not detected	Oncogenic HPV (not 16/18) detected	Oncogenic HPV 16/18 detected
LBC not performed*	15	9,685	74	6
LBC Unsatisfactory	n.p.	8	176	n.p.
LBC Negative	0	288	9,115	206
LBC Squamous low-grade abnormality	3	30	5,025	147
LBC Squamous high-grade abnormality or squamous cell carcinoma	0	0	829	33
LBC Glandular abnormality or adenocarcinoma	0	0	20	0

* LBC is not indicated after an unsatisfactory HPV test or where oncogenic HPV is not detected; LBC not performed after oncogenic HPV detected can occur if a sample is self-collected and an LBC sample has not been collected (participant did not return or LBC not performed at colposcopy).

Notes

1. Each combination has been colour-coded in this table according to risk of significant cervical abnormality based on first follow-up HPV test and LBC test result only. There will be some participants with an intermediate risk first follow-up episode result that will be managed as higher risk due to their age, screening history, or Indigenous status.
2. Some first follow-up HPV tests that did not detect oncogenic HPV were followed by an LBC test. These episodes have been allocated a risk according to their LBC test result. Unsatisfactory HPV tests followed by an LBC test are only allocated a risk if their LBC test result indicated a high-grade abnormality or cancer, as these screening episodes would be deemed higher risk irrespective of the first follow-up HPV test result. Oncogenic HPV (not 16/18) detected HPV tests are only allocated a risk if there is a valid LBC test associated with this, as a valid LBC test result is required to determine if the first follow-up episode is intermediate risk or higher risk.

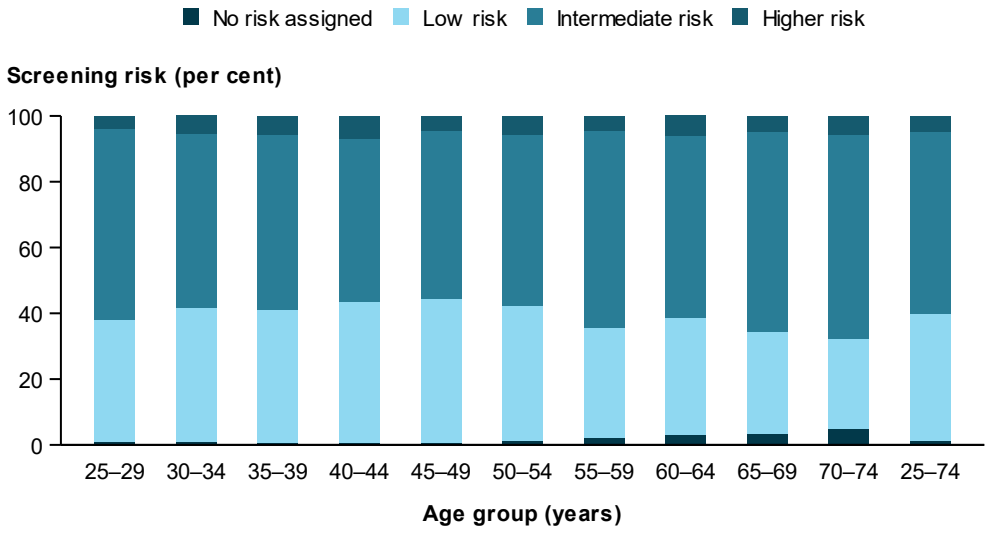
Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

First follow-up episodes by age

Risk categories for each age group are shown in Figure 3.11.1.

The proportion of first follow-up episodes that were low risk was highest for ages 30–34 to 50–54, decreasing after this age. The proportion of first follow-up episodes that were intermediate risk was higher for the age group 25–29 and for ages 55 years and over, and lower for ages between 30 and 54. The proportion of first follow-up episodes that were higher risk was very low in participants aged 25–29 and higher in participants aged 30–34 to 60–64 (Figure 3.11.1).

Figure 3.11.1: First follow-up episode risk categories, by age, 2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A11.1.

Second follow-up episodes

In 2022, there were 19,524 second follow-up episodes that occurred in participants in the target age group 25–74. These episodes were assigned to one of the two risk categories of low or higher (or were unable to be assigned to a risk category) based on the combination of the second follow-up HPV test result and, where indicated, the LBC test result. This is explained in the 'Guide to interpretation' for this performance indicator.

Overall, of the 19,524 second follow-up episodes in 2022 in participants aged 25–74:

- 30.7% were low risk
- 69.2% were higher risk
- 0.1% could not be assigned a risk.

Second follow-up episodes by HPV ± LBC test results

In Table 3.11.2, the combination of second follow-up HPV test result and LBC test result is shown for each second follow-up episode.

Each combination has been colour-coded in this table according to risk of significant cervical abnormality based on the second follow-up HPV test result and LBC test result only.

As outlined in the 'Data considerations' section, allocation of risk in this table does not consider the characteristics of intermediate risk participants (age, screening history, and Indigenous status) that indicate that the participant will instead be managed as higher risk.

Instead, this indicator looks only at the risk of the second follow-up episode based on the second follow-up HPV test result and, where indicated, the LBC test result, and not the risk of the participant, which may sometimes be higher risk instead of intermediate risk.

In Table 3.11.2, low risk is indicated by light blue shading and higher risk by darker blue shading. Second follow-up episodes for which a risk could not be assigned have no shading.

Table 3.11.2: Second follow-up HPV ± LBC test results, participants aged 25–74, 2022

	Second follow-up HPV test result			
Reflex LBC test result	Unsatisfactory	Oncogenic HPV not detected	Oncogenic HPV (not 16/18) detected	Oncogenic HPV 16/18 detected
LBC not performed*	17	5,739	43	n.p.
LBC Unsatisfactory	n.p.	7	121	n.p.
LBC Negative	n.p.	251	7,665	164
LBC Squamous low-grade abnormality	n.p.	40	4,534	126
LBC Squamous high-grade abnormality or squamous cell carcinoma	0	0	777	15
LBC Glandular abnormality or adenocarcinoma	0	0	17	0

* LBC is not indicated after an unsatisfactory HPV test or where oncogenic HPV is not detected; LBC not performed after oncogenic HPV detected can occur if a sample is self-collected and an LBC sample has not been collected (participant did not return or LBC not performed at colposcopy).

Notes

1. Each combination has been colour-coded in this table according to risk of significant cervical abnormality based on second follow-up HPV test and LBC test result only.
2. Some second follow-up HPV tests that did not detect oncogenic HPV were followed by an LBC test. These episodes have been allocated a risk according to their LBC test result. Unsatisfactory HPV tests followed by an LBC test are only allocated a risk if their LBC test result indicated a high-grade abnormality or cancer, as these second follow-up episodes would be deemed higher risk irrespective of the second follow-up HPV test result. Oncogenic HPV not detected followed low-grade LBC would usually be allocated intermediate risk, but has been allocated higher risk for second follow-up episodes for the purpose of reporting these episodes as either low risk or higher risk (or no risk allocated).

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

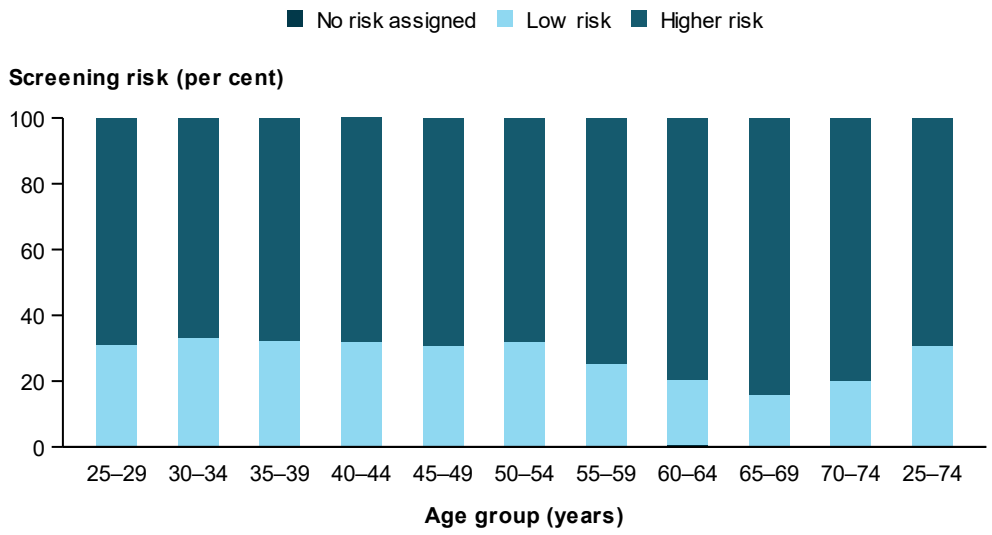
Second follow-up episodes by age

Risk categories for each age group are shown in Figure 3.11.2.

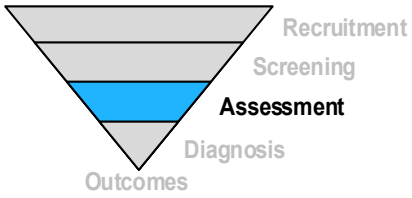
The proportion of second follow-up episodes that were low risk was higher for participants aged under 55 and lower for participants aged 55 and over. Conversely, the proportion of second follow-up episodes that were higher risk was lower for participants aged under 55 and higher for participants aged 55 and over (Figure 3.11.2).

The proportion of second follow-up episodes for which risk could not be assigned was too low to be visible in the figure.

Figure 3.11.2: Second follow-up episode risk categories, by age, 2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A11.3.



Assessment

Performance Indicator 12: Colposcopy rate

Summary colposcopy rate data

Of the participants aged 25–74 who were referred for colposcopy in 2021, 62.6% had a colposcopy within 3 months.

Definition:

Percentage of participants aged 25–74 who have a screening or follow-up episode result that places them at higher risk of significant cervical abnormality in a calendar year who attend colposcopy within 3 months.

Rationale:

The success of a screening program is reliant on assessment being performed when required. This measures compliance with referral for colposcopy based on a screening episode result or follow-up episode result that places them at higher risk of significant cervical abnormality, and should be calculated for each screening episode result and follow-up episode result.

Data considerations:

Colposcopy is the examination of the cervix using a magnifying instrument called a colposcope, and is the first step in the assessment stage of the screening pathway.

Prior to 1 February 2021, only one follow-up HPV test was performed 12 months following an intermediate risk primary screening episode, with the participant deemed to be either low risk (no oncogenic HPV detected) or higher risk (any oncogenic HPV detected). Since 1 February 2021, if the first follow-up HPV test detects oncogenic HPV (not 16/18) and the reflex LBC is negative or low-grade, then the participant remains at intermediate risk, and a second follow-up HPV test is performed 12 months after the first, with the participant deemed to be either low risk (no oncogenic HPV detected) or higher risk (any oncogenic HPV detected).

This means that some participants who would have previously been considered higher risk and included in these data are now considered intermediate risk and not included.

In the screening pathway, characteristics of participants including age, screening history, and Indigenous status can result in a participant with an intermediate risk follow-up episode being managed as higher risk instead of intermediate risk.

However, this indicator looks only colposcopy within 3 months of higher risk results based on the HPV test result and, where indicated, the LBC test result, without considering characteristics of the participants. The result of this is that there are a number of first follow-up screening episodes where the participant will instead be managed as higher risk due to their age, screening history, or Indigenous status that are not included in these data.

Guide to interpretation:

A higher colposcopy rate is better.

The change in the screening pathway for intermediate risk participants from 1 February 2021 means comparisons with previous years should not be made.

This performance indicator is based on primary screening episodes performed in 2021. This allows 3 months to 31 March 2022 to know whether a colposcopy occurred, and a further 6 months to 30 September 2022 to ensure that colposcopy and histology data to 31 March 2022 are complete.

Results

Participants whose screening episode, first follow-up episode, or second follow-up episode indicates that they are at higher risk of significant cervical abnormality are referred for colposcopy.

In 2021, there were four groups of participants aged 25–74 who, as a result of their screening episode, first follow-up episode, or second follow-up episode result, were considered at higher risk. These were:

- participants whose primary screening HPV test result was oncogenic HPV 16/18
- participants whose primary screening HPV test result was oncogenic HPV (not 16/18) and whose reflex LBC test result was a high-grade squamous abnormality, squamous cell carcinoma, or a glandular abnormality
- participants whose first follow-up HPV test result was oncogenic HPV 16/18 or whose first follow-up HPV test result was oncogenic HPV (not 16/18) and whose reflex LBC test result was a high-grade squamous abnormality, squamous cell carcinoma, or a glandular abnormality
- participants whose second follow-up HPV test result was any HPV.

The colposcopy rate of these four groups was calculated as the proportion of participants who had a colposcopy within 3 months (Table 3.12.1).

Table 3.12.1: Colposcopy rate, by screening or follow-up result, participants aged 25–74, 2021

Screening or follow-up result	Number of colposcopies	Colposcopy rate (%)
Primary screening test HPV 16/18 + any LBC	7,348	64.6
Primary screening test HPV (not 16/18) + high-grade/glandular LBC	1,989	77.0
First follow-up test HPV 16/18 + any LBC or HPV (not 16/18) + high-grade/glandular LBC	1,359	74.2
Second follow-up test any HPV + any LBC	1,449	40.3
Total	**12,145**	**62.6**

Note: Participants whose first follow-up HPV test result was oncogenic HPV (not 16/18) and whose reflex LBC test result was a negative or low-grade are managed as higher risk instead of intermediate risk if they are 2 or more years overdue for screening, identify as Aboriginal and/or Torres Strait Islander, or aged 50 or over, but as noted in the data considerations, higher risk is based on test results without considering characteristics of the participants, so these participants are not included in the first follow-up group.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Participants whose primary screening HPV test detected oncogenic HPV (not 16/18) and whose reflex LBC test result was a high-grade squamous abnormality, squamous cell carcinoma, or a glandular abnormality had the highest colposcopy rate, with 77.0% of these participants having a colposcopy within 3 months.

This was closely followed by participants whose first follow-up HPV test detected oncogenic HPV 16/18 or whose first follow-up HPV test detected oncogenic HPV (not 16/18) and whose reflex LBC test result was a high-grade squamous abnormality, squamous cell carcinoma, or

a glandular abnormality, with 74.2% of these participants having a colposcopy within 3 months.

The next highest colposcopy rate was for participants whose primary screening HPV test detected oncogenic HPV 16/18, of whom 64.6% had a colposcopy within 3 months.

The lowest colposcopy rate was for participants whose second follow-up HPV test detected any oncogenic HPV, at 40.3%.

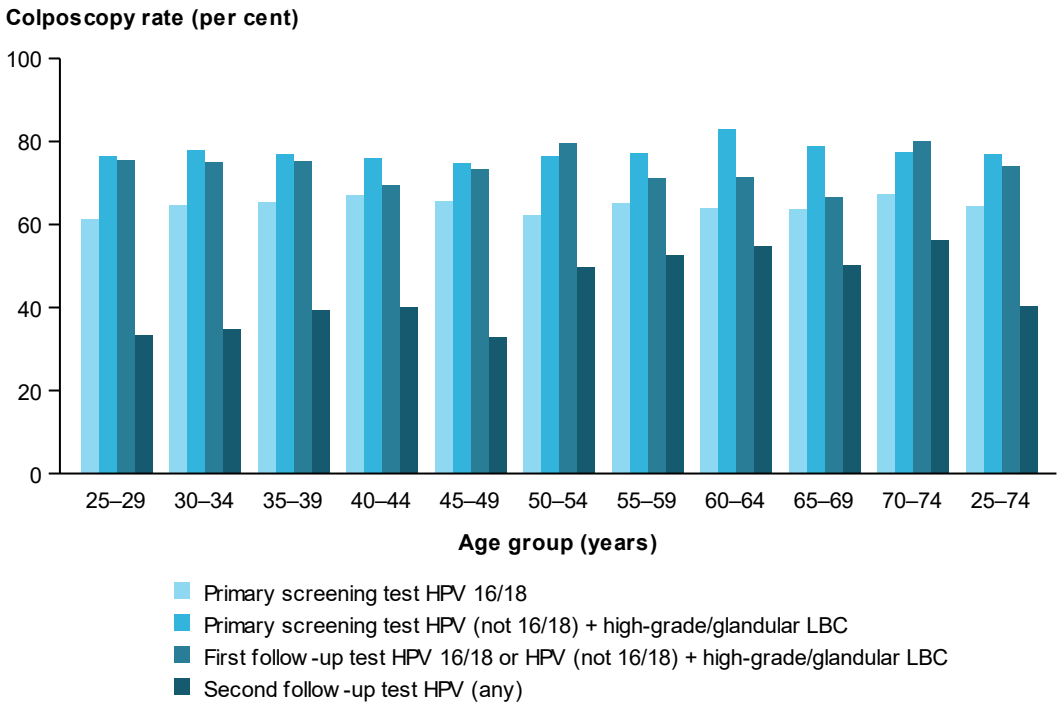
The total colposcopy rate for all participants referred for colposcopy combined was 62.6%.

Colposcopy rate by age

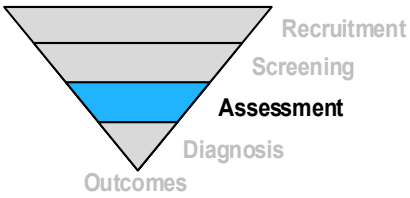
The colposcopy rate is shown by age for each of the four groups of participants referred for colposcopy in Figure 3.12.1.

There are no clear age trends in colposcopy rates across the four groups, with the colposcopy rate generally similar across age groups within each group of participants.

Figure 3.12.1: Colposcopy rate, by screening or follow-up result, by age, 2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A12.1.



Performance Indicator 13: Time to colposcopy

Summary time to colposcopy data

For participants aged 25–74 who were referred for colposcopy in 2021, the median time to colposcopy was 56 days.

Definition:

Participants aged 25–74 who have a screening or follow-up episode result that places them at higher risk of significant cervical abnormality, the time between the screening or follow-up result and colposcopy, measured as median and 90th percentile values, as well as within specified timeframes.

Rationale:

Participants who receive a screening episode result or follow-up episode result that places them at higher risk of significant cervical abnormality will be referred to colposcopy. The recommended timeframes in which they should undergo colposcopic assessment is as per the NCSP Guidelines (Cancer Council Australia and Cervical Cancer Screening Guidelines Working Party). Monitoring actual time between screening result or follow-up result and colposcopy provides important information as to whether participants are receiving timely assessment, as delay in assessment may lead to poorer outcomes.

Data considerations:

Colposcopy is the examination of the cervix using a magnifying instrument called a colposcope, and is the first step in the assessment stage of the screening pathway.

Prior to 1 February 2021, only one follow-up HPV test was performed 12 months following an intermediate risk primary screening episode, with the participant deemed to be either low risk (no oncogenic HPV detected) or higher risk (any oncogenic HPV detected). Since 1 February 2021, if the first follow-up HPV test detects oncogenic HPV (not 16/18) and the reflex LBC is negative or low-grade, then the participant remains at intermediate risk, and a second follow-up HPV test is performed 12 months after the first, with the participant deemed to be either low risk (no oncogenic HPV detected) or higher risk (any oncogenic HPV detected).

This means that some participants who would have previously been considered higher risk and included in these data are now considered intermediate risk and not included.

In the screening pathway, characteristics of participants including age, screening history, and Indigenous status can result in a participant with an intermediate risk follow-up episode being managed as higher risk instead of intermediate risk. However, this indicator looks only at time to colposcopy after higher risk results based on the HPV test result and, where indicated, the LBC test result, without considering characteristics of the participants. The result of this is that there are some first follow-up screening episodes where the participant will instead be managed as higher risk due to their age, screening history, or Indigenous status that are not included in these data.

Guide to interpretation:

A shorter time to colposcopy is better.

The change in the screening pathway for intermediate risk participants from 1 February 2021 means comparisons with previous years should not be made.

> This performance indicator is based on primary screening tests performed in 2021. This allows 12 months to 31 December 2022 to calculate time to colposcopy, and a further 6 months to 30 June 2023 to ensure that colposcopy and histology data to 31 December 2022 are complete.

Results

Time to colposcopy was calculated for the same four groups of participants aged 25–74 for whom a colposcopy rate was calculated.

The median time to colposcopy for each group is shown in Table 3.13.1.

The median time to colposcopy was:

- 57 days for participants whose primary screening test detected oncogenic HPV 16/18
- 43 days for participants whose primary screening test detected oncogenic HPV (not 16/18) and whose LBC test result was a high-grade squamous or any glandular abnormality
- 49 days for participants whose first follow-up HPV test detected oncogenic HPV 16/18 or whose first follow-up HPV test detected oncogenic HPV (not 16/18) and whose reflex LBC test result was a high-grade squamous abnormality, squamous cell carcinoma, or a glandular abnormality
- 85 days for participants whose second follow-up test detected any oncogenic HPV.

The lowest mean time to colposcopy was observed in participants who had an LBC that confirmed a high-grade abnormality. This aligns with the clinical guidelines, in which the recommended time to colposcopy is driven by the LBC result (for example, within 2 weeks for an LBC test result that indicates that cancer is present, and within 8 weeks for an LBC test result that indicates that a high-grade squamous abnormality is present).

Table 3.13.1: Time to colposcopy, by screening or follow-up result, participants aged 25–74, 2021

Screening or follow-up result	Median	90th percentile
Primary screening test HPV 16/18 + any LBC	57	206
Primary screening test HPV (not 16/18) + high-grade/glandular LBC	43	133
First follow-up test HPV 16/18 + any LBC or HPV (not 16/18) + high-grade/glandular LBC	49	156
Second follow-up test any HPV + any LBC	85	482
Total	**56**	**244**

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Time to colposcopy as proportion who had a colposcopy within 26 weeks

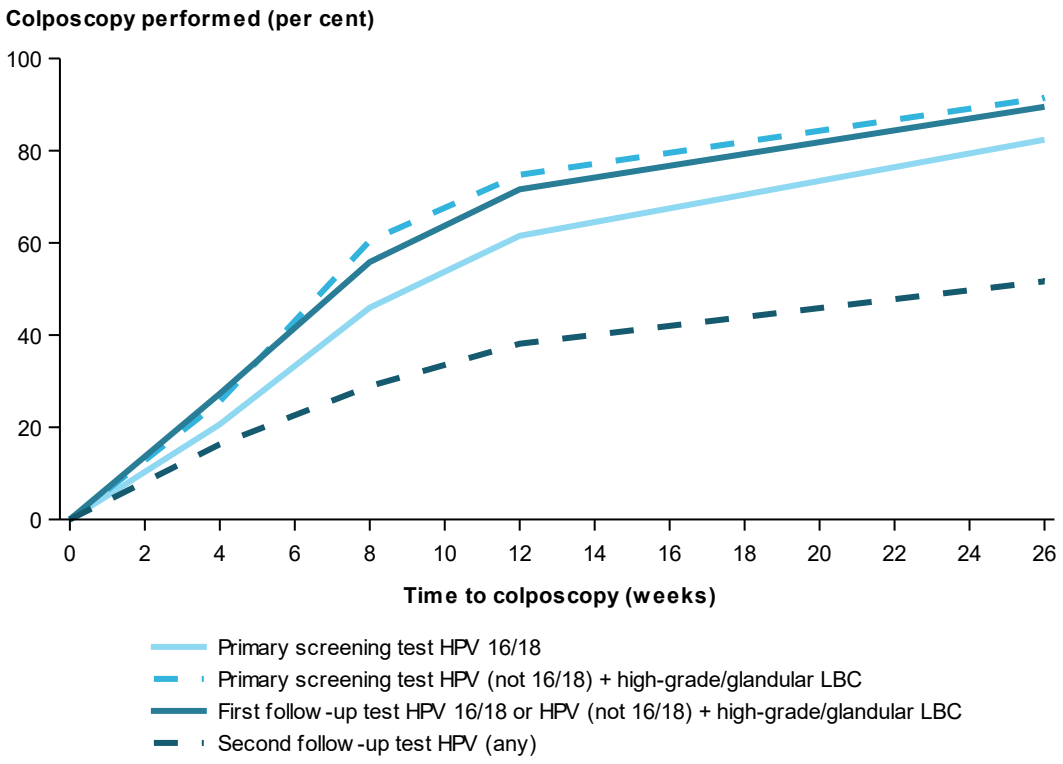
Time to colposcopy was also calculated as the proportion of participants who had a colposcopy within 4 weeks, 8 weeks, 12 weeks, and 26 weeks (Figure 3.13.1).

At 26 weeks after their higher risk screening episode or follow-up episode:

- 82.4% of participants whose primary screening test detected oncogenic HPV 16/18 had a colposcopy
- 91.5% of participants whose primary screening test detected oncogenic HPV (not 16/18) and whose reflex LBC test result was a high-grade squamous abnormality, squamous cell carcinoma, or a glandular abnormality had a colposcopy
- 89.5% of participants whose first follow-up HPV test result was oncogenic HPV 16/18 or whose first follow-up HPV test result was oncogenic HPV (not 16/18) and whose reflex LBC test result was a high-grade squamous abnormality, squamous cell carcinoma, or a glandular abnormality had a colposcopy
- 51.7% of participants whose second follow-up HPV test result was any HPV had a colposcopy.

Overall, 78.6% of participants aged 25–74 whose screening test result in 2021 indicated that they should attend colposcopy had a colposcopy within 26 weeks of their screening test.

Figure 3.13.1: Proportion of participants who had a colposcopy within 4 weeks, 8 weeks, 12 weeks, and 26 weeks, by screening or follow-up result, participants aged 25–74, 2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure available in Table A13.1.

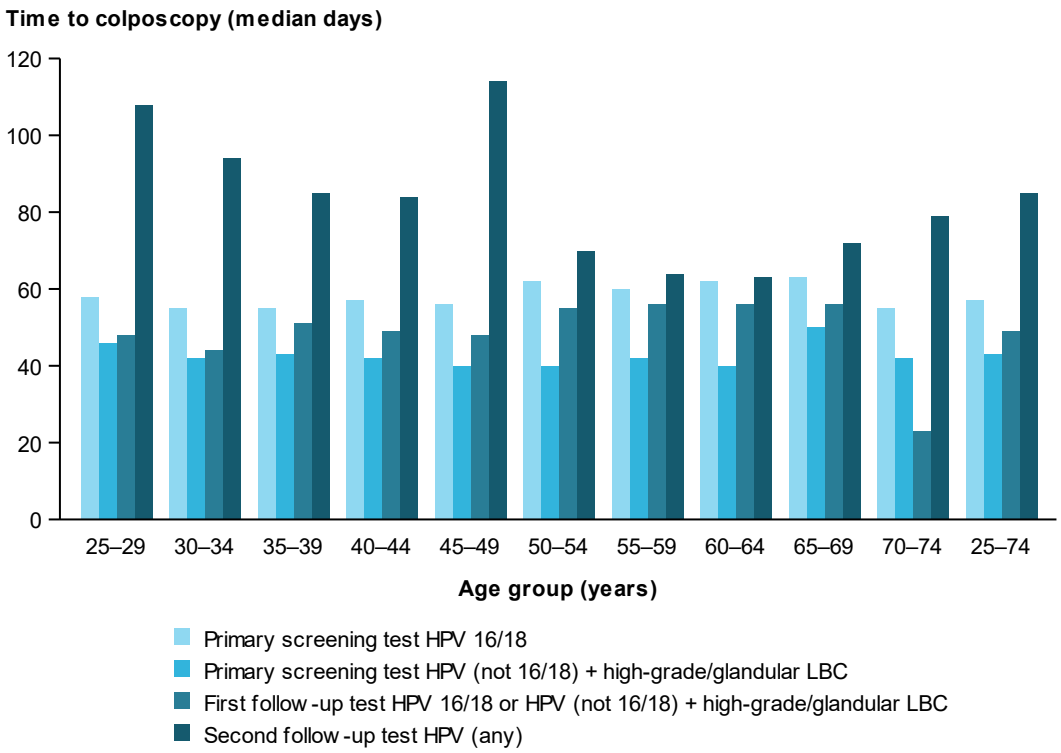
Time to colposcopy by age

The median number of days to colposcopy is shown by age for each of the four groups of participants referred for colposcopy in Figure 3.13.2.

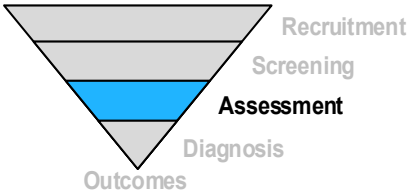
Median number of days to colposcopy was highest for all age groups for participants whose second follow-up HPV test result was any HPV.

There are no clear age trends in the median number of days to colposcopy across the four groups of participants.

Figure 3.13.2: Time to colposcopy, by screening or follow-up result, by age, 2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure available in Table A13.2.



Performance Indicator 14: Biopsy rate

Summary biopsy rate data

A biopsy was reported to have been performed in 38.2% of reported colposcopies for participants aged 25-74 in 2022.

Definition:

Percentage of colposcopies in participants aged 25–74 in which a biopsy was performed in a calendar year.

Rationale:

Although there are reasons why a biopsy would not be performed at colposcopy, a lower than expected biopsy rate would require further investigation.

Data considerations:

Colposcopy data in the NCSR come from several sources. One source is the colposcopy form, which includes information on the colposcopy itself including whether a biopsy was performed, as well as treatment details. While colposcopy data are also sourced from MBS, this level of information is not available for colposcopies for which MBS is the only data source. Therefore, biopsy rate is calculated using only colposcopies for which the source of data is a colposcopy form. Consequently, the biopsy rate may not be an accurate reflection of the true biopsy rate for the NCSP.

Results

In 2022, there were 84,651 colposcopies performed for participants aged 25–74 as indicated by a completed colposcopy form. A biopsy was reported to have been performed at 32,362 (38.2%) of these colposcopies.

To better understand why a biopsy may or may not be performed, the biopsy rate is shown according to indication for colposcopy (reason why colposcopy performed) (Table 3.14.1) and colposcopy impression (impression of colposcopist at time of colposcopy) (Table 3.14.2).

From these tables it can be seen that the reason why a participant was referred to colposcopy had an influence on whether a biopsy was performed, with an indication for colposcopy of ‘New patient with abnormal cervical screening result’ having the highest biopsy rate of 48.8%, followed by an indication for colposcopy of ‘Abnormal appearance of cervix’ at 41.2% (Table 3.14.1).

The colposcopy impression also had a major influence, with a biopsy much more likely to be performed where the colposcopist identified an abnormality. The biopsy rate was 83.9% for LSIL (squamous low-grade abnormality), 69.9% for HSIL (squamous high-grade abnormality), 57.4% for a glandular abnormality, and 81.3% for cancer (Table 3.14.2).

Table 3.14.1: Biopsy rate, by indication for colposcopy, participants aged 25–74, 2022

Indication for colposcopy	Number	Biopsy rate (%)
Not performed	9	12.9
New patient with abnormal cervical screening result	18,634	48.8
Follow-up of patient with previous abnormal cervical screening result	8,790	32.1
Symptomatic	2,597	35.0
Abnormal appearance of cervix	557	41.2
At time of treatment	673	17.4
Other	523	16.4
Missing	579	18.3
Total	**32,362**	**38.2**

Note: There are a small number of colposcopies for which the Indication for colposcopy was incorrectly assigned to 'Not performed'.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table 3.14.2: Biopsy rate, by colposcopy impression, participants aged 25–74, 2022

Colposcopy impression	Number	Biopsy rate (%)
Normal	2,461	9.4
No Visible Lesion	2,021	12.3
LSIL	17,558	83.9
HSIL	6,771	69.9
Glandular Abnormality (adenocarcinoma in situ)	112	57.4
Cancer	161	81.3
Other	2,404	48.7
Missing	874	14.7
Total	**32,362**	**38.2**

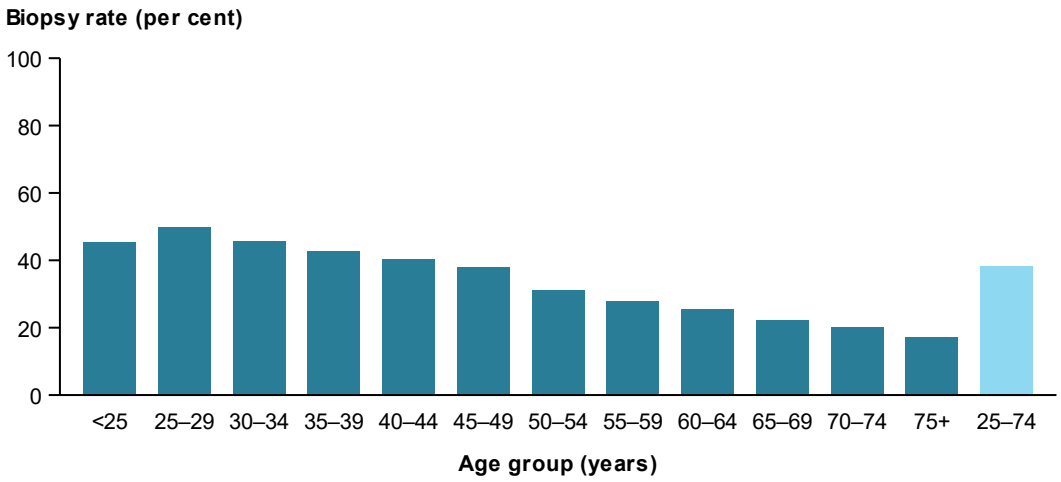
Note: LSIL = low-grade squamous intraepithelial lesion (low-grade abnormality); HSIL = high-grade squamous intraepithelial lesion (high-grade abnormality)

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Biopsy rate by age

Age also affected whether a biopsy was performed at colposcopy, with a biopsy more likely at colposcopies performed for younger participants (highest at 49.7% for participants aged 25–29), thereafter decreasing with increasing age (Figure 3.14.1).

Figure 3.14.1: Biopsy rate, by age, 2022

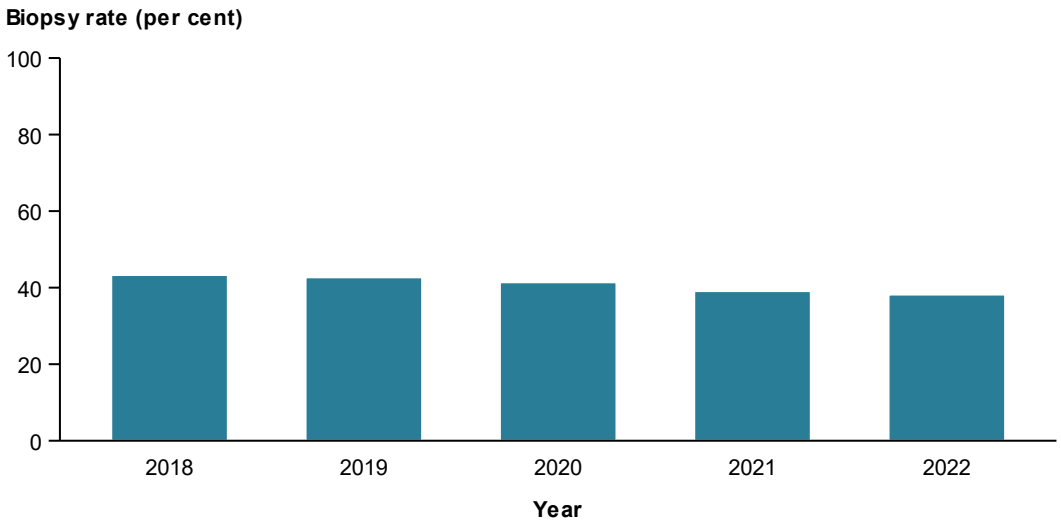


Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A14.1.

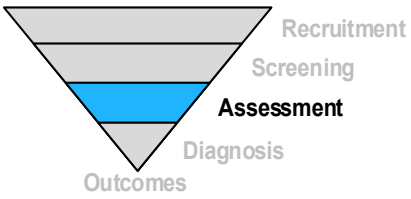
Biopsy rate trends

The proportion of colposcopies at which a biopsy was performed has decreased over time, from 43.2% in 2018, to 42.8% in 2019, to 41.3% in 2020, to 39.0% in 2021, and to 38.2% in 2022 (Figure 3.14.2).

Figure 3.14.2: Biopsy rate, by year, participants aged 25–74, 2018 to 2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A14.3.



Performance Indicator 15: Yield of high-grade abnormalities on biopsy among participants who attend colposcopy after higher risk screening results

Summary data on yield of high-grade abnormalities on biopsy among participants who attend colposcopy after higher risk screening results

Of the participants aged 25–74 who had a colposcopy in 2021 following a higher risk screening or follow-up result, 31.0% had a high-grade abnormality or cervical cancer detected on histology within 6 months of the colposcopy.

Definition:

Percentage of participants aged 25–74 with a higher risk screening or follow-up episode result who had a colposcopy in a calendar year who were diagnosed with a high-grade abnormality or cervical cancer on histology within 6 months of colposcopy.

Rationale:

As participants who are referred to colposcopy are at higher risk of significant cervical abnormality, it is expected that a proportion of these will be diagnosed with a high-grade abnormality or cervical cancer. This indicator can be used as a measure of the accuracy of colposcopy in identifying and sampling a high-grade abnormality or cervical cancer that is present.

Data considerations:

Colposcopy data in the NCSR come from several sources. One source is the colposcopy form, which includes information on the colposcopy itself. While colposcopy data are also sourced from MBS, this level of information is not available for colposcopies for which MBS is the only data source. Therefore, the yield of high-grade abnormalities on biopsy among participants who attend colposcopy after higher risk screening results is calculated using only colposcopies for which the source of data is a colposcopy form.

Prior to 1 February 2021, only one follow-up HPV test was performed 12 months following an intermediate risk primary screening episode, with the participant deemed to be either low risk (no oncogenic HPV detected) or higher risk (any oncogenic HPV detected). Since 1 February 2021, if the follow-up HPV test detects oncogenic HPV (not 16/18) and the reflex LBC is negative or low-grade, then the participant remains at intermediate risk, and a second follow-up HPV test is performed 12 months after the first, with the participant deemed to be either low risk (no oncogenic HPV detected) or higher risk (any oncogenic HPV detected).

This means that some participants who would have previously been considered higher risk and included in these data are now considered intermediate risk and not included.

In the screening pathway, characteristics of participants including age, screening history, and Indigenous status can result in a participant with an intermediate risk follow-up episode being

managed as higher risk instead of intermediate risk. However, this indicator looks only at time to colposcopy after higher risk results based on the HPV test result and, where indicated, the LBC test result, without considering characteristics of the participants. The result of this is that there are some first follow-up screening episodes where the participant will instead be managed as higher risk due to their age, screening history, or Indigenous status that are not included in these data.

The change in the screening pathway for intermediate risk participants from 1 February 2021 means comparisons with previous years should not be made.

> This performance indicator is based on colposcopies performed in 2021. This allows 6 months to 30 June 2022 to know if they were diagnosed with a high-grade abnormality or cervical cancer within 6 months, and a further 6 months to 31 December 2022 to ensure that histology data to 30 June 2022 are complete.

Results

The yield of high-grade abnormalities on biopsy includes all colposcopies performed after a higher risk screening or follow-up test. Of the participants aged 25–74 who had a colposcopy in 2021 following a higher risk screening or follow-up result, 31.0% had a high-grade abnormality or cervical cancer detected on histology within 6 months of the colposcopy.

This differed according to the higher risk screening or follow-up result that preceded the colposcopy. The yield of high-grade abnormalities on biopsy was highest for participants whose primary screening HPV test detected oncogenic HPV (not 16/18) and whose LBC test result was a high-grade squamous abnormality, squamous cell carcinoma, or a glandular abnormality at 62.9%.

The yield of high-grade abnormalities on biopsy was next highest for participants whose first follow-up HPV test detected oncogenic HPV 16/18 or whose first follow-up HPV test detected oncogenic HPV (not 16/18) and whose reflex LBC test result was a high-grade squamous abnormality, squamous cell carcinoma, or a glandular abnormality at 44.5%.

The yield of high-grade abnormalities on biopsy was lower for participants whose primary screening HPV test detected HPV 16/18 at 23.0% and participants whose second follow-up HPV test detected any oncogenic HPV at 11.5% (Table 3.15.1).

Table 3.15.1: Yield of high-grade abnormalities on biopsy among participants who attend colposcopy after higher risk screening results, by screening or follow-up result, participants aged 25–74, 2021

Screening or follow-up result	Number	Yield (%)
Primary screening test HPV 16/18 + any LBC	2,349	23.0
Primary screening test HPV (not 16/18) + high-grade/glandular LBC	1,712	62.9
First follow-up test HPV 16/18 + any LBC or HPV (not 16/18) + high-grade/glandular LBC	908	44.5
Second follow-up test any HPV + any LBC	190	11.5
Total	**5,159**	**31.0**

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

These results demonstrate that the LBC test result when oncogenic HPV is detected is likely to affect the yield of high-grade abnormalities on biopsy. This is shown in Table 3.15.2, with the yield of high-grade abnormalities on biopsy for each squamous and endocervical LBC

result from the higher risk screening or follow-up test that preceded the colposcopy shown. Yield was found to increase with increasing severity of abnormality, and was highest at 88.9% for LBC results of squamous cell carcinoma, and 90.5% for LBC results of adenocarcinoma in situ or adenocarcinoma (Table 3.15.2).

Table 3.15.2: Yield of high-grade abnormalities on biopsy among participants who attend colposcopy after higher risk screening results, by LBC result, participants aged 25–74, 2021

LBC test result	Number	Yield (%)
S1 negative	392	6.1
S2 possible low-grade squamous intraepithelial lesion	194	11.4
S3 low-grade squamous intraepithelial lesion	316	19.7
S4 possible high-grade squamous intraepithelial lesion	1,866	53.7
S5 high-grade squamous intraepithelial lesion	2,055	76.7
S6 or S7 high-grade squamous intraepithelial lesion with possible invasion or squamous cell carcinoma	112	88.9
E2 atypical endocervical cells of uncertain significance	60	47.2
E3 possible high-grade endocervical glandular lesion	57	72.2
E4, E5, or E6 adenocarcinoma in situ, adenocarcinoma in situ with possible invasion, or adenocarcinoma	76	90.5

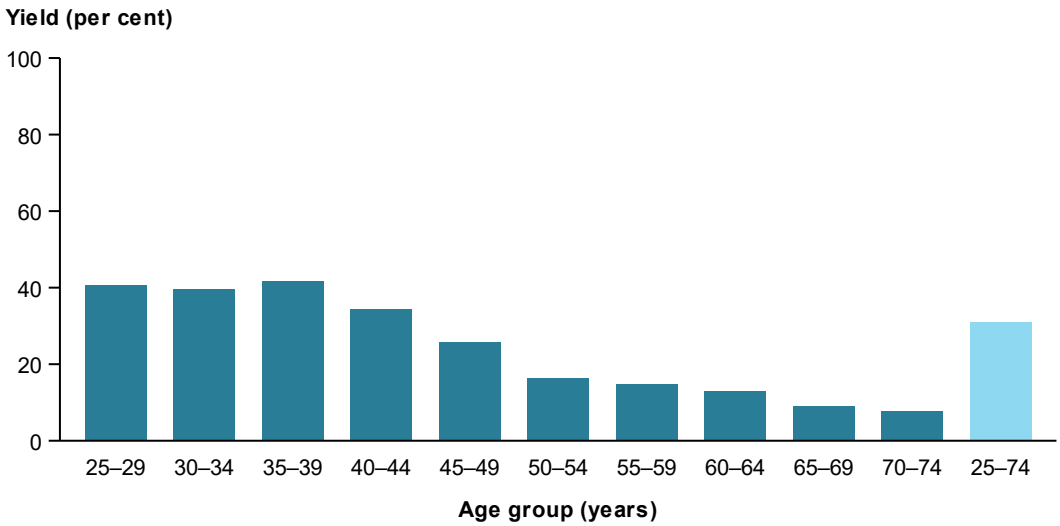
Note: This table includes each squamous and endocervical result in isolation, not as a pair, so where there is a high-grade abnormality or cervical cancer within 6 months of a negative squamous result, there may have been a glandular abnormality in the endocervical result.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

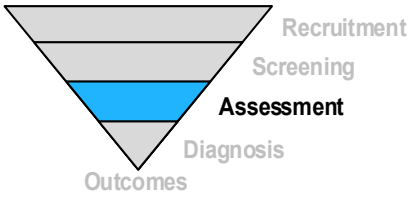
Yield of high-grade abnormalities by age

The yield of high-grade abnormalities on biopsy among participants who attend colposcopy after higher risk screening results is shown by age in Figure 3.15.1. This was above 30% for younger participants, dropping for participants aged 45 and over to reach a low of 7.8% for participants aged 70–74.

Figure 3.15.1: Yield of high-grade abnormalities on biopsy among participants who attend colposcopy after higher risk screening results, by age, 2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A15.1.



Performance Indicator 16: Positive predictive value of colposcopy

Summary positive predictive value of colposcopy data

The positive predictive value of colposcopies performed in 2021 for participants aged 25–74 was 72.7%.

Definition:

Percentage of participants aged 25–74 with a higher risk screening or follow-up episode result who had a colposcopic impression of HSIL, glandular abnormality (adenocarcinoma in situ) or cancer in a calendar year who were diagnosed with a high-grade abnormality or cervical cancer on histology within 6 months of colposcopy.

Rationale:

This indicator correlates the colposcopic impression with histological findings to determine the predictive value of colposcopy for high-grade cervical abnormalities. This is an important measure of the quality of colposcopy**.**

Data considerations:

Colposcopy data in the NCSR come from several sources. One source is the colposcopy form, which includes information on the colposcopy itself and colposcopic impression. While colposcopy data are also sourced from MBS, this level of information is not available for colposcopies for which MBS is the only data source. Therefore, the positive predictive value of colposcopy is calculated using only colposcopies for which the source of data is a colposcopy form.

Prior to 1 February 2021, only one follow-up HPV test was performed 12 months following an intermediate risk primary screening episode, with the participant deemed to be either low risk (no oncogenic HPV detected) or higher risk (any oncogenic HPV detected). Since 1 February 2021, if the first follow-up HPV test detects oncogenic HPV (not 16/18) and the reflex LBC is negative or low-grade, then the participant remains at intermediate risk, and a second follow-up HPV test is performed 12 months after the first, with the participant deemed to be either low risk (no oncogenic HPV detected) or higher risk (any oncogenic HPV detected).

This means that some participants who would have previously been considered higher risk and included in these data are now considered intermediate risk and not included.

In the screening pathway, characteristics of participants including age, screening history, and Indigenous status can result in a participant with an intermediate risk follow-up episode being managed as higher risk instead of intermediate risk. However, this indicator looks only at time to colposcopy after higher risk results based on the HPV test result and, where indicated, the LBC test result, without considering characteristics of the participants. The result of this is that there are some first follow-up screening episodes where the participant will instead be managed as higher risk due to their age, screening history, or Indigenous status that are not included in these data.

The change in the screening pathway for intermediate risk participants from 1 February 2021 means comparisons with previous years should not be made.

This performance indicator is based on colposcopies performed in 2021. This allows 6 months to 30 June 2022 to know if they were diagnosed with a high-grade abnormality or cervical cancer within 6 months, and a further 6 months to 31 December 2022 to ensure that histology data to 30 June 2022 are complete.

Results

The positive predictive value of colposcopy includes all colposcopies performed after a higher risk screening or follow-up test with a colposcopic impression of high-grade abnormality or cervical cancer.

Of the participants aged 25–74 who had a colposcopy in 2021 with a colposcopic impression of high-grade abnormality or cervical cancer following a higher risk screening or follow-up test, 72.7% had a high-grade abnormality or cervical cancer detected on histology within 6 months of the colposcopy. This is the positive predictive value of colposcopy.

This differed according to the higher risk screening or follow-up result that preceded the colposcopy. The positive predictive value of colposcopy was highest for participants whose primary screening HPV test detected oncogenic HPV (not 16/18) and whose LBC test result was a high-grade squamous abnormality, squamous cell carcinoma, or a glandular abnormality at 76.6%.

The positive predictive value of colposcopy was next highest for participants whose primary screening HPV test detected HPV 16/18 at 71.1%, and participants whose first follow-up HPV test detected oncogenic HPV 16/18 or whose first follow-up HPV test detected oncogenic HPV (not 16/18) and whose reflex LBC test result was a high-grade squamous abnormality, squamous cell carcinoma, or a glandular abnormality at 71.0%.

The positive predictive value of colposcopy was lower, but still high, for participants whose second follow-up HPV test detected any oncogenic HPV at 61.3% (Table 3.16.1).

Table 3.16.1: Positive predictive value of colposcopy, by screening or follow-up test result, participants aged 25–74, 2021

Screening or follow-up test result	Number	Positive predictive value (%)
Primary screening test HPV 16/18 + any LBC	1,166	71.1
Primary screening test HPV (not 16/18) + high-grade/glandular LBC	989	76.6
First follow-up test HPV 16/18 + any LBC or HPV (not 16/18) + high-grade/glandular LBC	454	71.0
Second follow-up test any HPV + any LBC	73	61.3
Total	**2,682**	**72.7**

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

The positive predictive value of colposcopy for each squamous and endocervical LBC result from the higher risk screening or follow-up test that preceded the colposcopy was also calculated. Positive predictive value of colposcopy was found to increase with increasing severity of abnormality, and was highest at 96.7% for LBC results of squamous cell carcinoma, and 98.0% for LBC results of adenocarcinoma in situ or adenocarcinoma (Table 3.16.2).

Table 3.16.2: Positive predictive value of colposcopy, by LBC result, participants aged 25–74, 2021

LBC test result	Number	Positive predictive value (%)
S1 negative	110	35.9
S2 possible low-grade squamous intraepithelial lesion	46	39.3
S3 low-grade squamous intraepithelial lesion	84	56.0
S4 possible high-grade squamous intraepithelial lesion	971	72.1
S5 high-grade squamous intraepithelial lesion	1,290	83.0
S6 or S7 high-grade squamous intraepithelial lesion with possible invasion or squamous cell carcinoma	59	96.7
E2 atypical endocervical cells of uncertain significance	29	65.9
E3 possible high-grade endocervical glandular lesion	30	78.9
E4, E5, or E6 adenocarcinoma in situ, adenocarcinoma in situ with possible invasion, or adenocarcinoma	48	98.0

Note: This table includes each squamous and endocervical result in isolation, not as a pair, so where there is a high-grade abnormality or cervical cancer within 6 months of a negative squamous result, there may have been a glandular abnormality in the endocervical result.

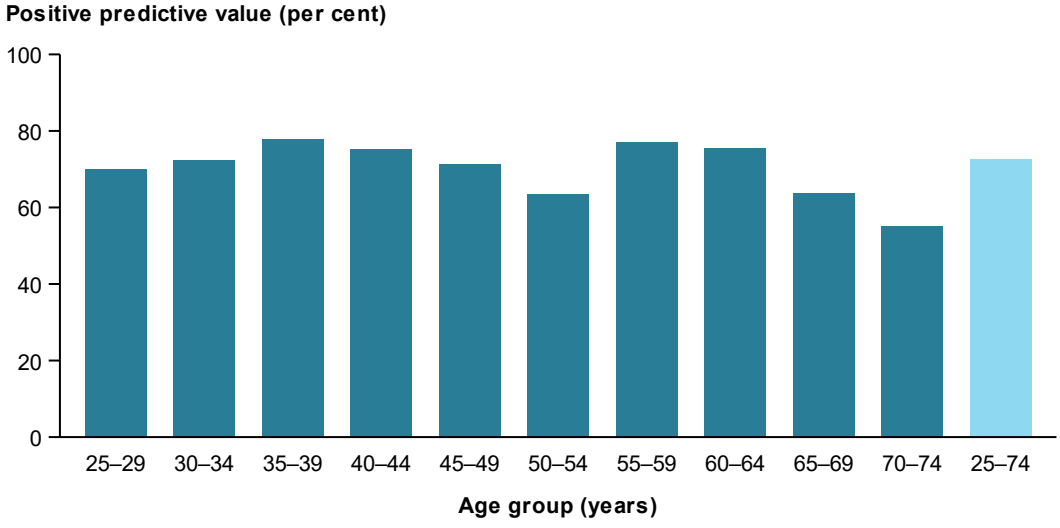
Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Positive predictive value of colposcopy by age

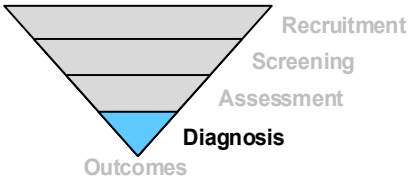
The positive predictive value of colposcopy is shown by age in Figure 3.16.1.

There are no clear age trends in the positive predictive value of colposcopy.

Figure 3.16.1: Positive predictive value of colposcopy, by age, 2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A16.1.



Diagnosis

Performance Indicator 17a: High-grade cervical abnormality detection rate

Summary high-grade cervical abnormality detection rate data

In 2022, there were 14.2 participants aged 25–74 with a high-grade abnormality detected by histology per 1,000 participants screened.

Definition:

Number of participants aged 25–74 with a high-grade abnormality detected on histology in a calendar year per 1,000 participants screened.

Rationale:

The detection of high-grade abnormalities is an indicator of program performance. High-grade abnormalities have a greater probability of progressing to invasive cancer than do low-grade lesions. Detection of high-grade abnormalities provides an opportunity for treatment before cancer can develop, thus the NCSP aims to detect high-grade abnormalities in line with its broader aim to reduce the incidence of cervical cancer.

Data considerations:

The high-grade cervical abnormality detection rate does not use a cohort method. The participants who have a high-grade abnormality detected on histology (numerator) and the participants who have screened (denominator) are not necessarily the same participants. This may differ from the high-grade abnormality rate calculated by others who may restrict data to screening tests and high-grade histology tests that occur as a result of these screening tests.

This performance indicator is restricted to histology tests notified by pathology laboratories. The NCSR also includes MBS histology data, but as these do not include a result, they are not included in these data.

This performance indicator is a count of participants, not tests. Where a participant has more than one high-grade abnormality detected, the most serious is counted. Where a participant has more than one high-grade abnormality of equal seriousness, the most recent is counted.

This performance indicator is based on histology performed in 2022. This allows 6 months to 30 June 2023 to ensure that histology data to 31 December 2022 are complete.

Results

In 2022, a high-grade cervical abnormality was detected by histology in 12,395 participants aged 25–74, which equates to 14.2 participants with a high-grade cervical abnormality detected per 1,000 participants screened. This means that for every 1,000 participants screened, 14 had a high-grade cervical abnormality detected, providing an opportunity for treatment before possible progression to cervical cancer.

It was previously thought that the development of cervical cancer involved progression from low-grade to moderate-grade to high-grade abnormalities, but it is now understood that low-grade and high-grade abnormalities represent different HPV infection processes.

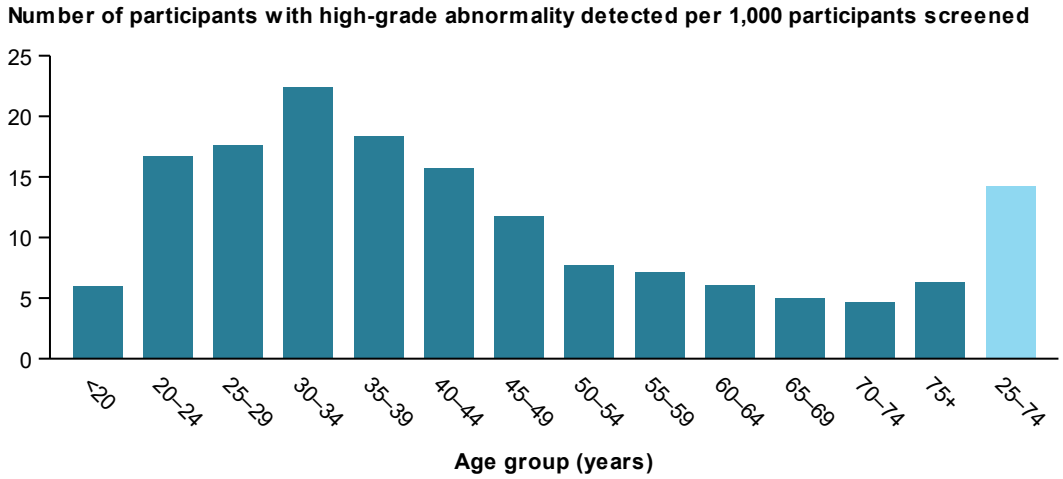
Low-grade abnormalities occur as a result of acute HPV infection, most of which will resolve spontaneously. High-grade abnormalities are the result of persistent infection with an oncogenic HPV type. Most high-grade abnormalities also regress over time (Raffle et al. 2003), but regression takes longer (Cancer Council Australia 2014). An important difference between non-oncogenic and oncogenic HPV types is that oncogenic HPV types integrate their DNA into the host genome, which is why these are associated with oncogenic changes to the cells of the cervix, whereas non-oncogenic HPV types are unable to integrate their DNA into the host genome and can only cause low-grade changes (Chhieng & Hui 2011).

As they are potential precursors to cervical cancer, detection of high-grade abnormalities through cervical screening provides an opportunity for treatment before cancer can develop. Detection of high-grade abnormalities is by histology, which is the primary diagnostic tool of the NCSP. Confirmation of disease is required before treatment is initiated, both to ensure treatment is appropriate and to avoid unnecessary treatment where disease is not present (in Australia it is considered best practice to confirm high-grade disease with histology before treatment (NHMRC 2005)).

High-grade cervical abnormality detection rate by age

The high-grade cervical abnormality detection rate was highest for participants aged 30–34 at 22.4 per 1,000 participants screened, thereafter decreasing with increasing age to fewer than 10 participants with a high-grade cervical abnormality detected per 1,000 participants screened for those aged 50 and over (Figure 3.17.1).

Figure 3.17.1: High-grade cervical abnormality detection rate, by age, 2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A17.1.

High-grade cervical abnormality detection by histological type

High-grade abnormalities of the cervix include squamous cell abnormalities of moderate grade (CIN 2) and severe grade (CIN 3), as well as cervical intraepithelial neoplasia (CIN) for which the grade has not been specified.

High-grade abnormalities of the cervix also include endocervical high-grade abnormalities. These are much rarer and include endocervical dysplasia and adenocarcinoma in situ (AIS).

The histological types of high-grade abnormalities included in the high-grade cervical abnormality detection rate were examined (noting that if a participant had more than one high-grade cervical abnormality detected, the most serious abnormality was included).

Data for the target age group 25–74 are summarised in Table 3.17.1.

CIN 3 was present in more than half (59.4%) of the participants in which a high-grade cervical abnormality was detected, with CIN 2 the next most common abnormality, present in 31.1% of the participants in which a high-grade cervical abnormality was detected.

As expected, endocervical abnormalities were rarer. The most common of these, adenocarcinoma in situ, was found in 3.3% of the participants in which a high-grade cervical abnormality was detected.

Table 3.17.1: Number of participants with high-grade cervical abnormality detected, by histological type, participants aged 25–74, 2022

	CIN NOS	CIN2	CIN3	Endocervical dysplasia	AIS
Number	728	3,857	7,359	37	414
%	5.9	31.1	59.4	0.3	3.3

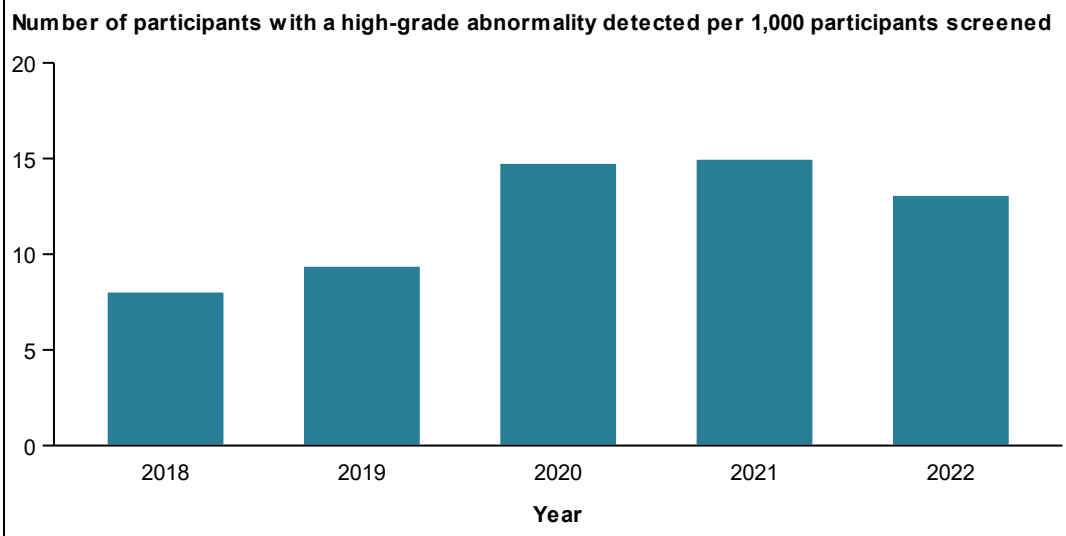
Note: CIN = cervical intraepithelial neoplasia; AIS = adenocarcinoma in situ; NOS = not otherwise specified.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data by 5-year age groups are available in Table A17.2.

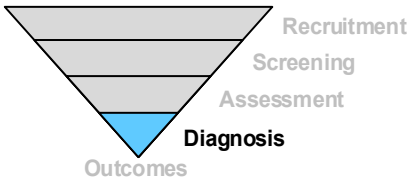
High-grade cervical abnormality detection rate trends

After adjusting for age, the high-grade abnormality rate has increased from 8.0 participants with a high-grade cervical abnormality detected by histology per 1,000 participants screened in 2018, to 9.4 in 2019, 14.8 in 2020, and 15.0 in 2021. The high-grade cervical abnormality rate then decreased slightly to 13.1 participants with a high-grade cervical abnormality detected by histology per 1,000 participants screened in 2022 (Figure 3.17.2).

Figure 3.17.2: High-grade cervical abnormality detection rate, by year, 2018 to 2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A17.4.



Performance Indicator 17b: Cervical cancer detection rate

Summary cervical cancer detection rate data

In 2022, there were 0.9 participants with a cervical cancer detected by histology per 1,000 screened, for participants aged 25–74.

Definition:

Number of participants aged 25–74 with cervical carcinoma detected on histology in a calendar year per 1,000 participants screened.

Rationale:

The cancer detection rate will be measured alongside the high-grade detection rate.

Data considerations:

The cancer detection rate measures cervical cancers detected on histology and included in the NCSR. This is different from cervical cancer incidence that uses data from the Australian Cancer Database, sourced from state and territory cancer registries.

The cervical cancer detection rate includes all cervical cancer histology, and is not restricted to histology that is performed after a primary screening test. Therefore, the denominator for this performance indicator is not restricted to the number of participants who have had a primary screening test, but includes all participants who had an HPV or LBC test for any reason.

This performance indicator is restricted to histology tests notified by pathology laboratories. The NCSR also includes MBS histology data, but as these do not include a result, they are not able to be included in these data.

This performance indicator is a count of participants, not tests. Where a participant has more than one cervical cancer detected, the most serious is counted. Where a participant has more than one cervical cancer of equal seriousness, the most recent is counted.

This performance indicator is based on histology performed in 2022. This allows 6 months to 30 June 2023 to ensure that histology data to 31 December 2022 are complete.

Results

The cervical cancer detection rate is the number of participants with a cervical cancer detected by histology per 1,000 participants screened.

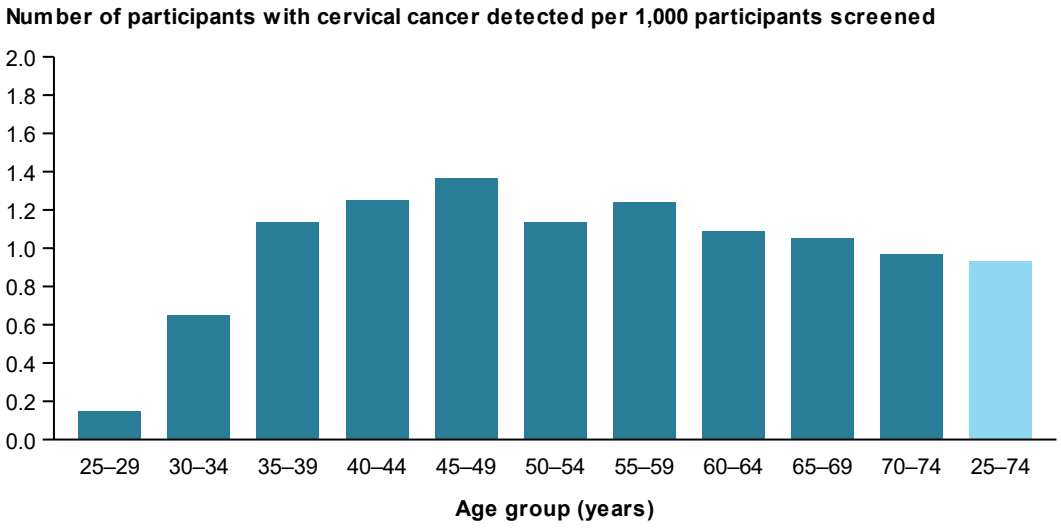
In 2022, a cervical cancer was detected by histology in 780 participants aged 25–74, which equates to 0.9 participants with a cervical cancer detected by histology per 1,000 participants screened. This means that, for every 1,000 participants screened, fewer than one participant had a cervical cancer detected.

The cervical cancer detection rate of 0.9 per 1,000 participants screened is far lower than the high-grade abnormality detection rate of 14.2 participants with a high-grade abnormality detected per 1,000 screened. This reflects that the aim of cervical screening is not to detect cervical cancer, but to prevent it through the detection of high-grade abnormalities.

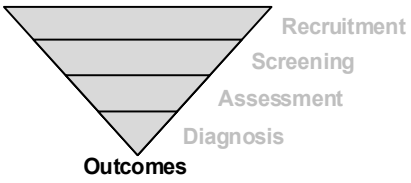
Cervical cancer detection rate by age

The cervical cancer detection rate was very low for participants aged 25–29 and 30–34, at 0.2 and 0.6 participants with cervical cancer detected by histology per 1,000 participants screened, respectively. The cervical cancer detection rate was between 1.0 and 1.4 participants with cervical cancer detected by histology per 1,000 participants screened for participants aged between 35–39 and 70–74 (Figure 3.17.3).

Figure 3.17.3: Cervical cancer detection rate, by age, 2022



Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table A17.5.



Outcomes

Performance Indicator 18: Cervical cancers diagnosed by time since last screen

Summary data on cervical cancers diagnosed by time since last screen

No data reported for this performance indicator.

Definition:

Number of females aged 25–74 diagnosed with cervical carcinoma in a calendar year categorised into never screened, lapsed screening, and recently screened based on time since last screen.

Rationale:

This is a measure of the burden of disease from a lack of participation in the screening program. Time since last screen is used to categorise all females diagnosed with cervical carcinoma as never screened, lapsed screening, or recently screened. Most cervical carcinomas have historically been diagnosed in those who have never screened, which is evidence of the benefit of participation in cervical screening.

Only cervical carcinomas (cervical cancers of epithelial origin) are included, as cervical cancers not of epithelial origin are not expected to be detected through cervical screening.

Never screened is defined as no record of having had a screening test in Australia prior to cancer diagnosis.

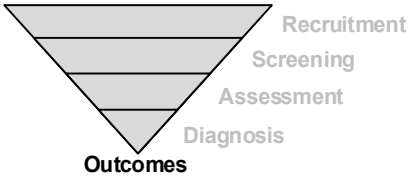
Lapsed screening is defined as last screening test >5.5 and ≤7.5 years, >7.5 and ≤10 years or >10 years prior to cancer diagnosis.

Recently screened is defined as last screening test ≤5.5 years prior to cancer diagnosis.

Data considerations:

Calculation of this performance indicator requires linkage between data from the NCSR and data from the Australian Cancer Database (ACD) and more than 5 years to have passed since the inception of the renewed NCSP to allow this performance indicator to be measured as per the definition.

Data are not yet available to support the reporting of this performance indicator



Performance Indicator 19: Incidence of cervical cancer

Summary cervical cancer incidence data

869 women aged 25–74 were diagnosed with cervical cancer in 2019, which is an incidence rate of 11.0 new cases per 100,000 women.

Definition:

Number of new cases of cervical cancer in females aged 25–74 in a calendar year per 100,000 estimated resident population.

Rationale:

Incidence data provide contextual information about the number of new cases of cervical cancer in the population that is an indicator of program performance against its aim to reduce cervical cancer through organised screening.

Data considerations:

Australia has high-quality and virtually complete cancer incidence data. Collected by state and territory cancer registries, clinical and demographic data for all cancer cases are provided to the AIHW and compiled in the Australian Cancer Database (ACD). Data in this section are sourced from the 2019 version of the ACD.

The 2019 version of the ACD currently contains data on all cases of cancer diagnosed from 1982 to 2019 for all states and territories.

Guide to interpretation:

Lower cervical cancer incidence is better.

Results

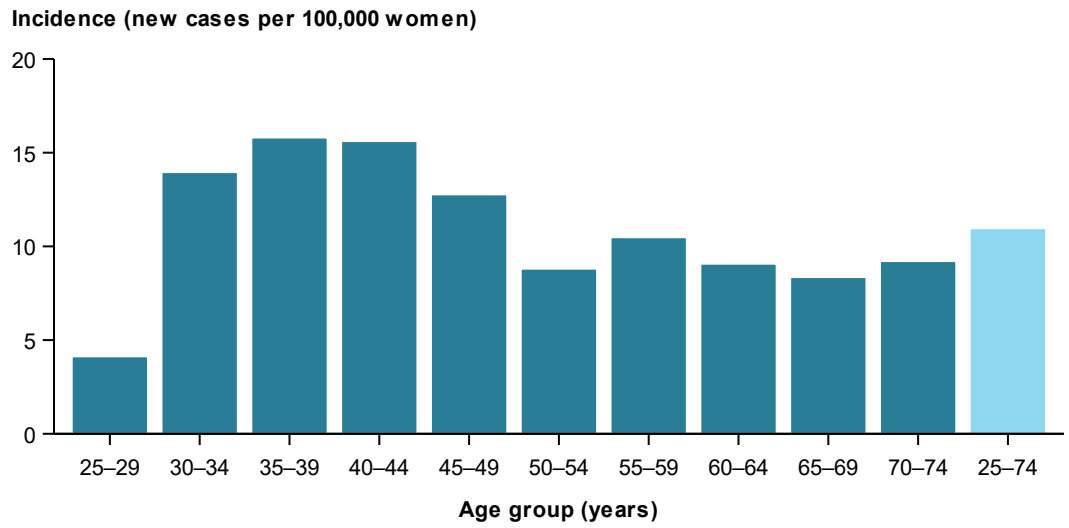
In 2019, there were 945 new cases of cervical cancer diagnosed in women of all ages, which is 7.4 new cases per 100,000 women in the population (7.2 new cases per 100,000 women after adjusting for age to allow comparison over time or across population groups). Of these, 869 new cases of cervical cancer were diagnosed in women aged 25–74 (the target age group of the NCSP), which is equivalent to 11.0 new cases per 100,000 women aged 25–74 (11.3 new cases per 100,000 women aged 25–74 after adjusting for age to allow comparison over time or across population groups).

Incidence by age

Cervical cancer incidence by age is shown in Figure 3.19.1.

In 2019, within the age group 25–74, cervical cancer incidence was lowest for women aged 25–29 at 4.1 new cases per 100,000 women. Incidence peaked for women aged 35–44 at around 16 new cases per 100,000 women, after which incidence fell to below 10 new cases per 100,000 women for women aged 60–74.

Figure 3.19.1: Cervical cancer incidence, by age, 2019



Source: AIHW Australian Cancer Database 2019. Data and notes for this figure are available in Table A19.1.

Incidence by histological type

While all cervical cancers share the site code C53 under the International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10), there are several histological subtypes within the category of cervical cancer, with clear differences in clinical behaviour (Blomfield and Saville 2008). Histology codes for cancers are collected in the ACD, which allows the analysis of trends in cervical cancer incidence for different histological types.

The histological types presented are based on the histological groupings for cervical cancer set out in Chapter 4 of Cancer incidence in five continents: vol. IX (Curado et al. 2007), with histological types marked by the type of cell in which the cancer originates. Thus, cervical cancer has been disaggregated into the following broad histological types:

- carcinoma (cancers of epithelial origin)
- sarcoma (cancers originating in connective tissue such as bone, muscle, and fat)
- other specified and unspecified malignant neoplasms (unusual cancers and cancers too poorly differentiated to be classified).

Carcinoma has been further split into:

- squamous cell carcinoma (which arises from the squamous cells that cover the outer surface of the cervix)
- adenocarcinoma (which arises from the glandular (columnar) cells in the endocervical canal)
- adenosquamous carcinoma (which contains malignant squamous and glandular cells)
- other carcinoma.

In 2019, of the 869 cervical cancers diagnosed in women aged 25–74, 847 (97.5%) were carcinomas, 1 (0.1%) was a sarcoma and 21 (2.4%) were classified as ‘Other specified and unspecified malignant neoplasms’ (Table 3.19.1).

The proportion of each histological type of cervical carcinoma diagnosed in 2019 (the latest year) and 1989 (30 years prior, and before the commencement of the NCSP in 1991) are shown in Figure 3.19.2. In 2019, squamous cell carcinomas comprised 61.9% of all cervical

carcinomas, followed by adenocarcinomas at 29.9% and adenosquamous carcinomas at 2.4%. Other specified and unspecified carcinomas comprised 5.9% of all cervical carcinomas. This is in contrast to 1989, when squamous cell carcinomas comprised 77.1% of all cervical carcinomas, with adenocarcinomas far rarer at 12.2% and adenosquamous carcinomas at 5.6%. Other specified and unspecified carcinomas were the remaining 5.2%.

Table 3.19.1: Cervical cancer incidence, by histological type, women aged 25–74, 2019

Type of cervical cancer	New cases	Crude rate	AS rate	% of cervical cancers	% of carcinomas
1: Carcinoma	847	10.7	11.0	97.5	100.0
1.1: Squamous cell carcinoma	524	6.6	6.8	60.3	61.9
1.2: Adenocarcinoma	253	3.2	3.3	29.1	29.9
1.3: Adenosquamous carcinoma	20	0.3	0.3	2.3	2.4
1.4: Other specified and unspecified carcinoma	50	0.6	0.6	5.8	5.9
2: Sarcoma	1	0.0	0.0	0.1	. .
3: Other specified and unspecified malignant neoplasm	21	0.3	0.3	2.4	. .
Total	**869**	**11.0**	**11.3**	**100.0**	**. .**

'Carcinoma' = International Classification of Diseases for Oncology, Third Edition (ICD-O-3) codes 8010–8380, 8382–8576.

'Squamous cell carcinoma' = ICD-O-3 codes 8050–8078, 8083–8084.

'Adenocarcinoma' = ICD-O-3 codes 8140–8141, 8190–8211, 8230–8231, 8260–8265, 8310, 8380, 8382–8384, 8440–8490, 8570–8574, 8576.

'Adenosquamous carcinoma' = ICD-O-3 code 8560.

'Other specified and unspecified carcinoma' = ICD-O-3 codes for carcinoma, excluding those for squamous cell carcinoma, adenocarcinoma and adenosquamous carcinoma.

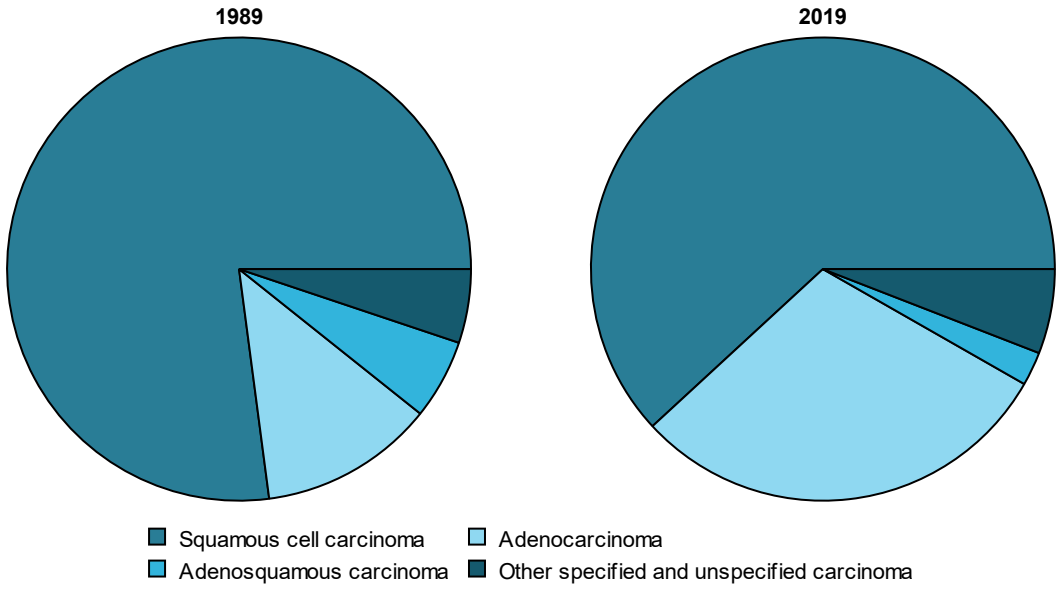
'Sarcoma' = ICD-O-3 codes 8800–8811, 8830, 8840–8921, 8990–8991, 9040–9044, 9120–9133, 9150, 9540–9581.

'Other specified and unspecified malignant neoplasm' = ICD-O-3 codes for cervical cancer, excluding those for carcinoma and sarcoma.

Note: Crude rate is the number of new cases of cervical cancer per 100,000 women. Age-standardised (AS) rate is the number of new cases of cervical cancer per 100,000 women, age-standardised to the Australian population as at 30 June 2001. Rates based on fewer than 20 new cases should be interpreted with caution. Numbers may not add to total due to rounding.

Source: AIHW Australian Cancer Database 2019.

Figure 3.19.2: Cervical cancer incidence, by histological type, women aged 25–74, 1989 and 2019



Source: AIHW Australian Cancer Database 2019.

The NCSP has been successful in preventing squamous cell carcinomas by detecting high-grade squamous abnormalities, these being readily identified by repeated cervical cytology (Blomfield and Saville 2008). As a result, squamous cell carcinomas now comprise 60% of cervical cancers, which is much reduced from their historical proportion of 95% (Blomfield and Saville 2008). In contrast, adenocarcinomas have not been reduced by cervical screening to the same degree. These glandular carcinomas were proportionately a rarer disease, but now comprise 29% of all cervical cancers, not because there are more adenocarcinomas, but because there are fewer squamous cell carcinomas that has had the effect of reducing the size of the 'pool' of cervical cancers.

Incidence by remoteness area

In 2015–2019, cervical cancer incidence for women aged 25–74 increased with increasing remoteness.

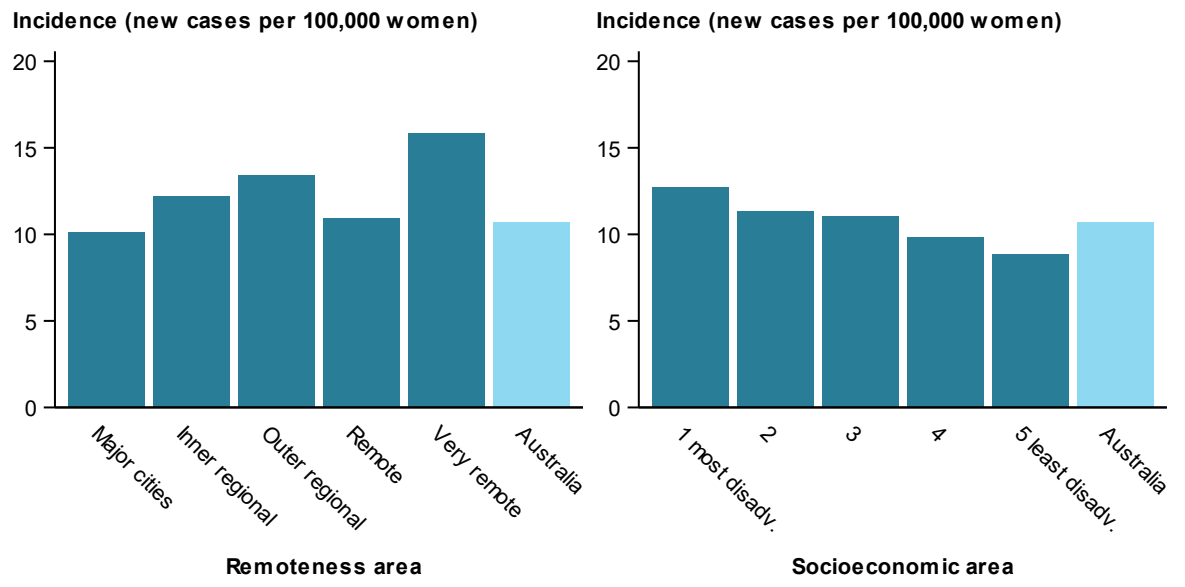
After adjusting for age, incidence of cervical cancer in women aged 25–74 in 2015–2019 was lowest for women living in *Major cities* at 10.1 new cases per 100,000 women. It was similar for women residing in *Inner regional*, *Outer regional* and *Remote* areas, at 12.2, 13.4 and 11.0 new cases per 100,000 women, respectively. Incidence was highest for women residing in *Very remote* areas at 15.9 new cases per 100,000 women (Figure 3.19.3).

Incidence by socioeconomic area

In 2015–2019, cervical cancer incidence for women aged 25–74 increased with increasing socioeconomic disadvantage.

After adjusting for age, cervical cancer incidence in women aged 25–74 was lowest for women residing in areas of lowest socioeconomic disadvantage at 8.9 new cases per 100,000 women; thereafter, it increased with increasing socioeconomic disadvantage and was highest for women residing in areas of highest socioeconomic disadvantage at 12.8 new cases per 100,000 women (Figure 3.19.3).

Figure 3.19.3: Cervical cancer incidence, by remoteness area and socioeconomic area, women aged 25–74, 2015–2019



Source: AIHW Australian Cancer Database 2019. Data and notes for this figure are available in Table A19.3 and A19.4.

Incidence trends

After adjusting for age, there was a modest decrease in the incidence of cervical cancer for women aged 25–74 between 1982 and 1990, from 21.2 to 20.3 new cases per 100,000 women. This is likely to have been a result of the ad-hoc cervical screening that occurred in Australia from the 1960s to 1990. However, it was with the introduction of organised cervical screening through the NCSP in 1991 that the greatest decreases in incidence occurred, with a rapid decrease to 9.9 new cases per 100,000 women by 2002, just over a decade after the national program commenced (Figure 3.19.4).

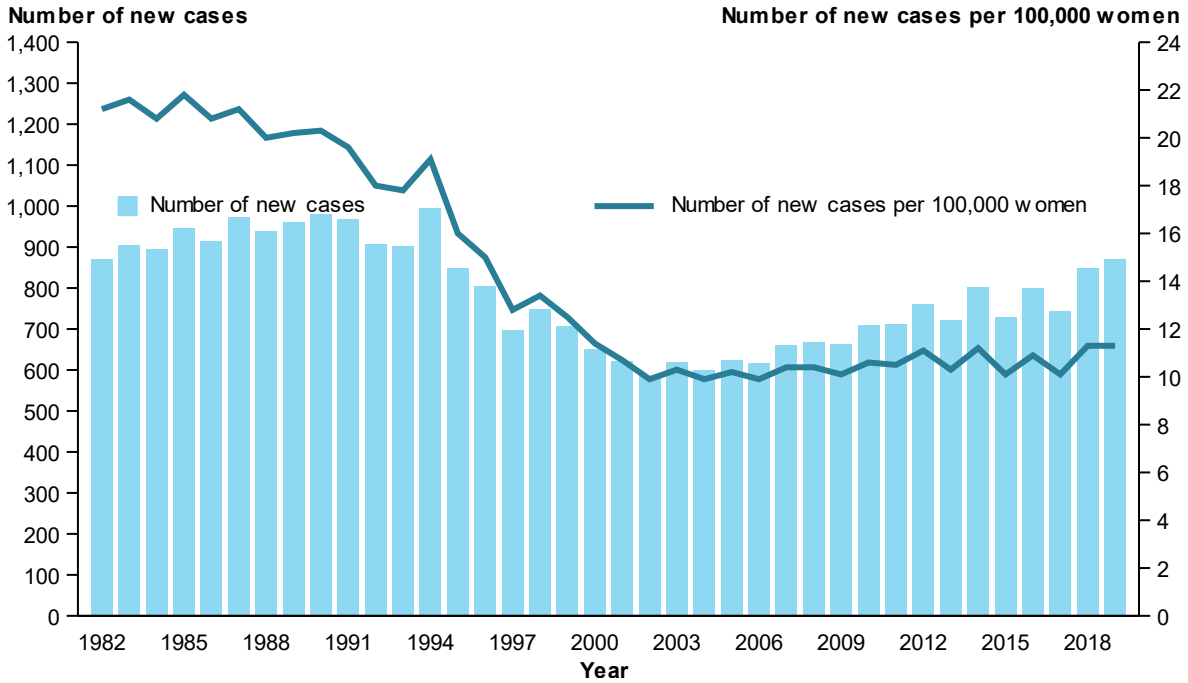
The trend for women aged 20–69, the target age group for the NCSP from 1991 to 2017, mirrors this trend for women aged 25–74, the current target age group for the NCSP.

Trends for women aged 25–74, women aged 20–69, and women of all ages are shown in Table A19.5. Between 2002 and 2019:

- Incidence remained steady for women aged 25–74, at between 10 and 11 new cases per 100,000 women.
- Incidence remained steady for women aged 20–69, at between 9 and 10 new cases per 100,000 women.
- Incidence remained steady for women of all ages at around 7 new cases per 100,000 women.

The decrease in incidence over time, which has been attributed to the NCSP, has been accompanied by a decrease in the ranking of cervical cancer – from the sixth most common cancer in women in 1982 to the 12th most common in 2019 – and a decrease in the risk of diagnosis before age 85 from 1 in 74 in 1982 to 1 in 164 in 2019 (AIHW 2023b).

Figure 3.19.4: Cervical cancer incidence, by year, women aged 25–74, 1982 to 2019



Note: Age-standardised rate is the number of new cases of cervical cancer per 100,000 women, age-standardised to the Australian population as at 30 June 2001.

Source: AIHW Australian Cancer Database 2019. Data and notes for this figure are available in Table A19.5.

These changes are consistent with the introduction of organised cervical screening programs internationally; however, cervical cancer remains one of the most common cancers in women in countries that do not have organised cervical screening, and fourth overall, so the worldwide burden is still high (IARC 2014), even with successes such as those in Australia.

Survival from cervical cancer

Survival in this report refers to 'relative survival', which is the probability of being alive for a given amount of time after diagnosis compared with the general population, and reflects the impact of a cancer diagnosis. The source of survival data is the 2019 Australian Cancer Database which includes data from the National Death Index on deaths (from any cause) that occurred up to 31 December 2019, which were used to determine which people with cancer had died and when this occurred.

In 2015–2019, women diagnosed with cervical cancer in Australia had a 75.0% chance of surviving for 5 years compared with their counterparts in the general population. For the target age group 25–74, 5-year survival was 78.7%.

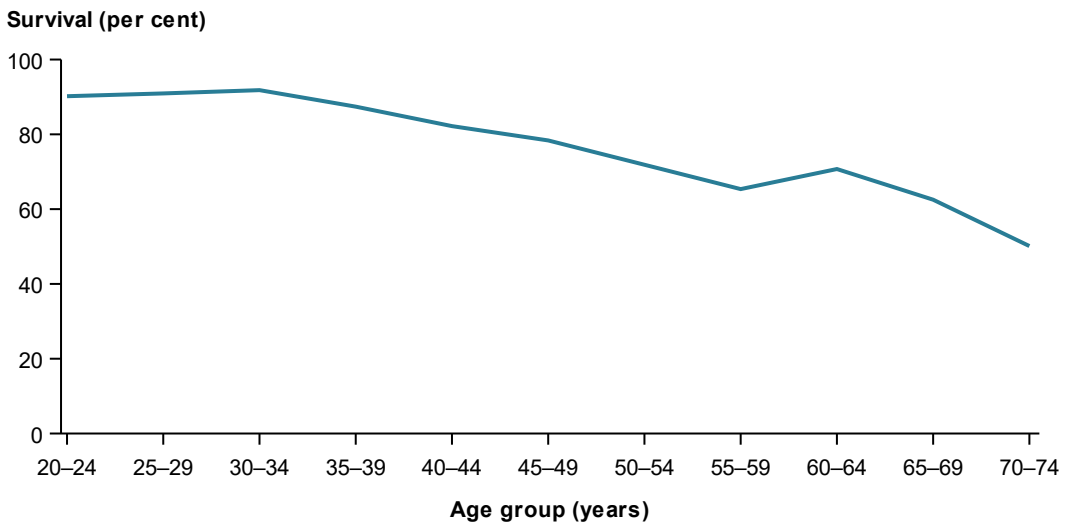
Five-year relative survival by age

Five-year relative survival from cervical cancer generally decreased with increasing age; women aged 20–34 had the highest survival at between 90% and 92%, whereas women aged 70–74 diagnosed with cervical cancer had only a 50.1% chance of surviving for 5 years (Figure 3.19.5).

Five-year relative survival trends

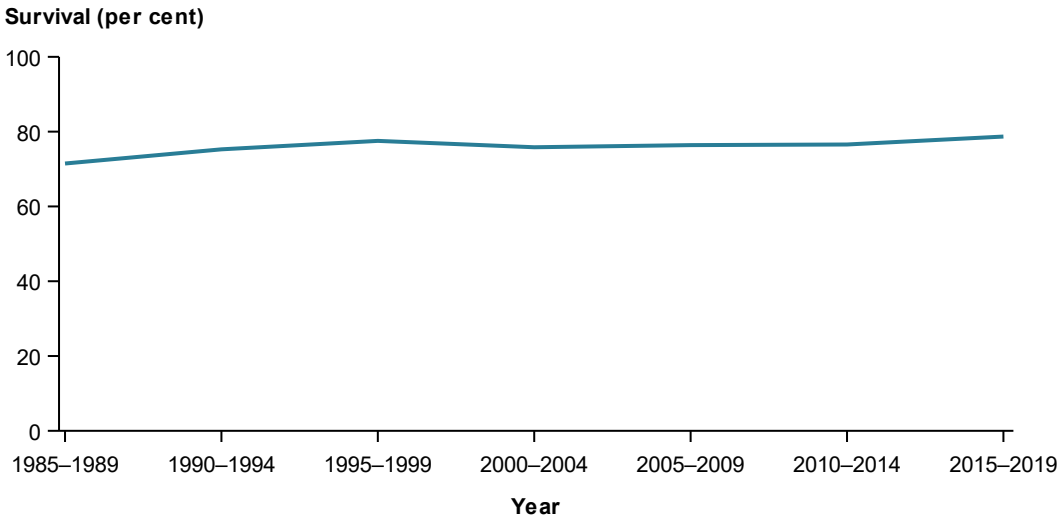
Between 1985–1989 and 2015–2019, 5-year relative survival increased from 71.5% to 78.7% for women aged 25–74 (Figure 3.19.6).

Figure 3.19.5: Five-year relative survival from cervical cancer, by age, 2015–2019



Source: AIHW Australian Cancer Database 2019. Data and notes for this figure are available in Table A19.6.

Figure 3.19.6: Trends in 5-year relative survival from cervical cancer in women aged 25–74, 1985–1989 to 2015–2019



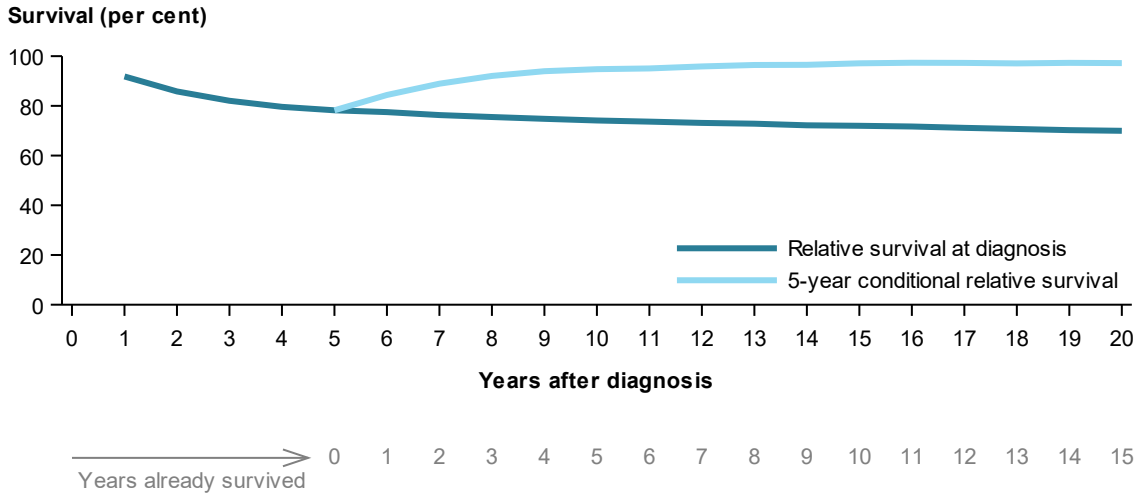
Source: AIHW Australian Cancer Database 2019. Data and notes for this figure are available in Table A19.7.

Conditional survival

Conditional survival is the probability of surviving a given number of years, provided that an individual has already survived a specified amount of time after diagnosis.

Conditional survival for cervical cancer for women aged 25–74 is illustrated in Figure 3.19.7.

Figure 3.19.7: Relative survival at diagnosis and 5-year conditional survival from cervical cancer in women aged 25–74, 2015–2019



Source: AIHW Australian Cancer Database 2019. Data and notes for this figure are available in Table A19.8.

In this graph, the darker blue line shows relative survival for each year after diagnosis (as shown by the numbers in black on the *x*-axis); the lighter blue line shows relative survival for each year once an individual has already survived a certain number of years (as shown by the numbers in grey on the *x*-axis).

For cervical cancer, 5-year relative survival – the prospect of surviving for at least 5 more years after having already survived for 5 years – was much higher than relative survival, at 95% (Figure 3.19.7), indicating that if a woman survives for at least 5 years after diagnosis, her survival is almost the same as a woman not diagnosed with cervical cancer.

Prevalence of cervical cancer

Prevalence is the number of people alive after a diagnosis of cancer. It is related to incidence and survival; if incidence and survival are both high, prevalence will be high, whereas if incidence and survival are both low, prevalence will be low.

The source of prevalence data is the 2019 ACD – which includes data from the National Death Index on deaths (from any cause) that occurred up to 31 December 2019, which were used to determine which people with cancer had died and when this occurred. Individuals who have been diagnosed with cancer and are still alive contribute to prevalence data.

At the end of 2019, there were 3,372 women aged 25–74 alive who had been diagnosed with cervical cancer in the previous 5 years and 6,003 who had been diagnosed in the previous 10 years (Table 3.19.2).

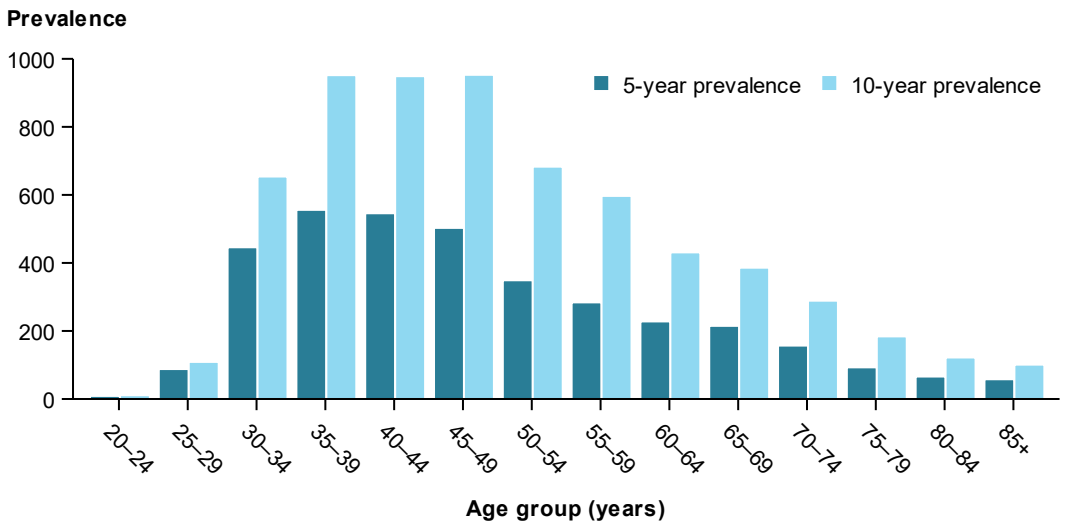
Prevalence by age is shown in Figure 3.19.8.

Table 3.19.2: Prevalence of cervical cancer, by age, end of 2019

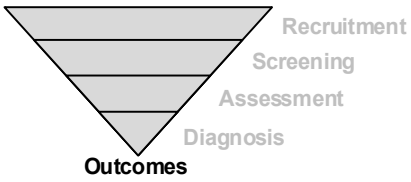
Age group	5-year prevalence	10-year prevalence
20–24	9	11
25–29	88	109
30–34	446	654
35–39	556	952
40–44	546	949
45–49	503	953
50–54	349	683
55–59	284	597
60–64	228	431
65–69	215	386
70–74	157	289
75–79	93	184
80–84	66	122
85+	58	101
25–74	**3,372**	**6,003**
All ages	**3,600**	**6,423**

Source: AIHW Australian Cancer Database 2019.

Figure 3.19.8: Prevalence of cervical cancer, by age, end of 2019



Source: AIHW Australian Cancer Database 2019.



Performance Indicator 20: Mortality from cervical cancer

Summary cervical cancer mortality data

179 women aged 25–74 died from cervical cancer in 2021, which is a mortality rate of 2.2 deaths per 100,000 women.

Definition:

Number of deaths from cervical cancer in females aged 25–74 in a calendar year per 100,000 estimated resident population.

Rationale:

Mortality data provide contextual information about the number of deaths from cervical cancer in the population that is an indicator of program performance against its aim to reduce mortality from cervical cancer through organised screening.

Guide to interpretation:

Lower cervical cancer mortality is better.

Results

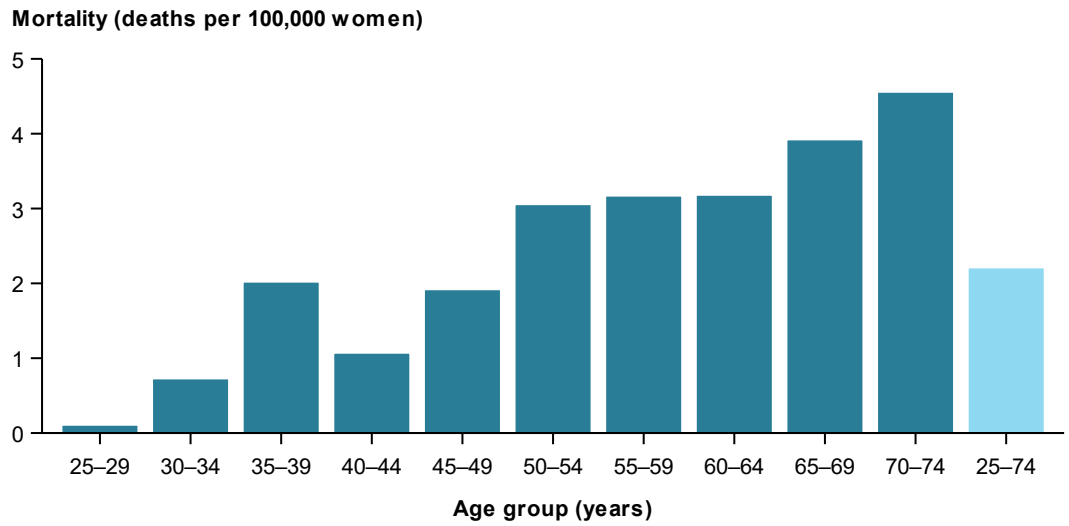
In 2021, there were 229 deaths from cervical cancer, which is 1.8 deaths per 100,000 women in the population (1.5 deaths per 100,000 women after adjusting for age to allow comparison over time or across population groups). Of these, 179 deaths from cervical cancer occurred in women aged 25–74 (the target age group for the NCSP), which is equivalent to 2.2 deaths per 100,000 women in the population (2.0 deaths per 100,000 women after adjusting for age to allow comparison over time or across population groups).

Mortality by age

Cervical cancer mortality by age is shown in Figure 3.20.1.

In 2021, within the age group 25–74, cervical cancer mortality was lowest for women aged under 30, being fewer than 1 death per 100,000 women for ages 25–29 and 30–34. Mortality increased with age, reaching 4.6 per 100,000 for women aged 70–74.

Figure 3.20.1: Cervical cancer mortality, by age, 2021



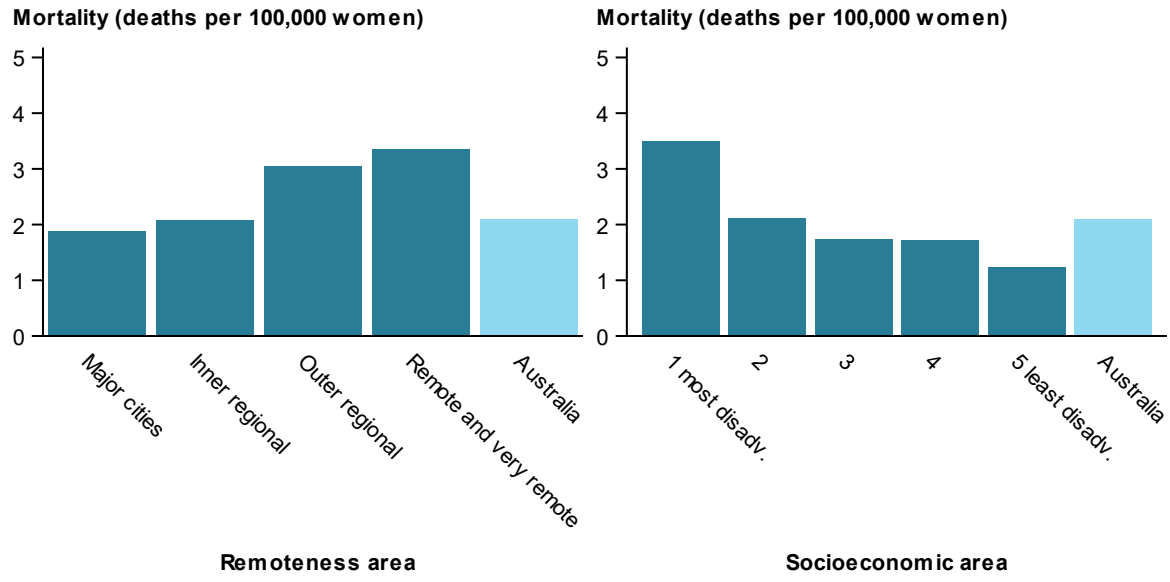
Source: AIHW National Mortality Database. Data and notes for this figure are available in Table A20.1.

Mortality by remoteness area

In 2017–2021, cervical cancer mortality for women aged 25–74 increased with increasing remoteness.

After adjusting for age, mortality in 2017–2021 was lowest for women residing in *Major cities* and *Inner regional* areas at 1.9 and 2.1 deaths per 100,000 women aged 25–74, respectively. Mortality was higher for women residing in *Outer regional* areas at 3.0 deaths per 100,000 women and highest in *Remote and very remote* areas at 3.3 deaths per 100,000 women aged 25–74 (Figure 3.20.2).

Figure 3.20.2: Cervical cancer mortality, by remoteness area and socioeconomic area, women aged 25–74, 2017–2021



Source: AIHW National Mortality Database. Data and notes for this figure are available in Table A20.3 and A20.4.

Mortality by socioeconomic area

In 2017–2021, cervical cancer mortality for women aged 25–74 increased with increasing socioeconomic disadvantage.

After adjusting for age, mortality in 2017–2021 was highest for women aged 25–74 residing in areas of highest socioeconomic disadvantage at 3.5 deaths per 100,000 women, and lowest for women residing in areas of lowest socioeconomic disadvantage at 1.2 deaths per 100,000 women (Figure 3.20.2).

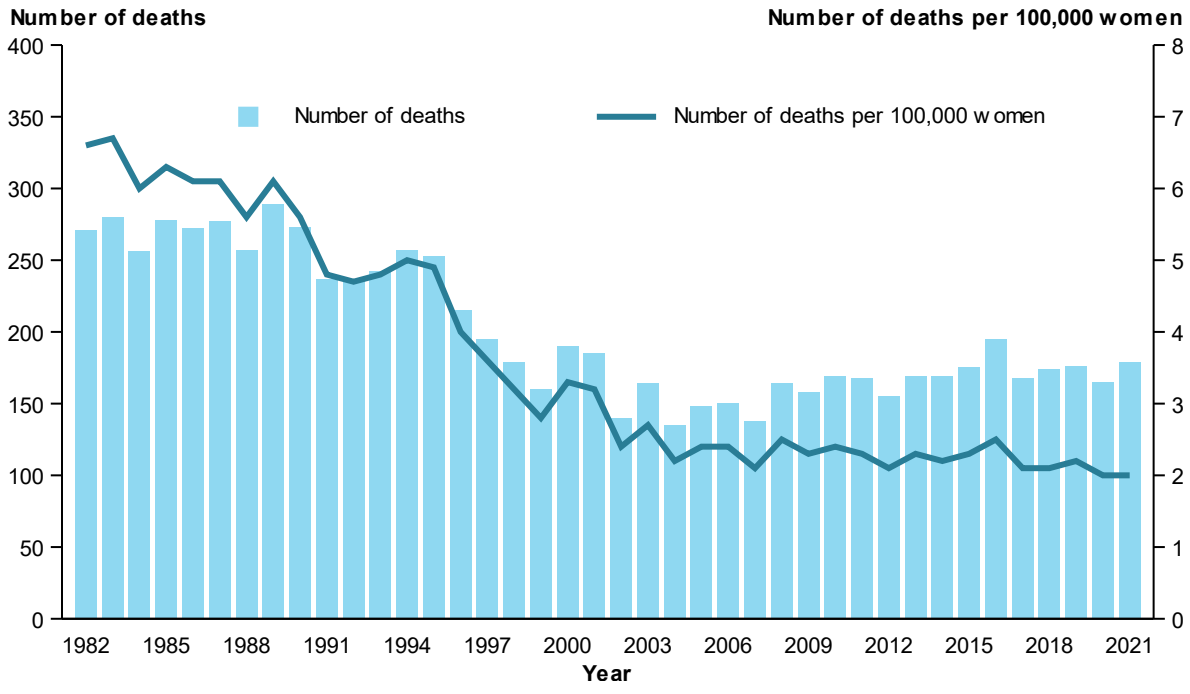
Mortality trends

Similar to the trend for cervical cancer incidence, after adjusting for age, there was a modest decrease in mortality for cervical cancer for women aged 25–74 between 1982 and 1990, from 6.6 to 5.6 deaths per 100,000 women.

The greatest decrease in mortality occurred following the introduction of the NCSP in 1991, with mortality from cervical cancer falling to 2.4 deaths per 100,000 women by 2002. Mortality remained steady at between 2.0 and 2.5 deaths per 100,000 women for all years between 2004 and 2021 (Figure 3.20.3).

The trend for women aged 20–69, the target age group for the NCSP from 1991 to 2017, mirrors this trend for women aged 25–74, the target age group for the NCSP from 2018.

Figure 3.20.3: Mortality from cervical cancer in women aged 25–74, 1982 to 2021



Notes

1. Deaths from 1982 to 2020 were derived by year of death; deaths in 2021 were derived by year of registration of death. Deaths registered in 2018 and earlier are based on the final version of cause of death data; deaths registered in 2019 are based on the revised version; and deaths registered in 2020 and 2021 are based on the preliminary version. Revised and preliminary versions are subject to further revision by the ABS.
2. Age-standardised rate is the number of deaths from cervical cancer per 100,000 women, age-standardised to the Australian population as at 30 June 2001.

Source: AIHW National Mortality Database. Data and notes for this figure are available in Table A20.5.

Trends for women aged 25–74, women aged 20–69, and women of all ages are shown in Table A20.5. Between 2004 and 2021:

- Mortality remained steady for women aged 25–74, at between 2.0 and 2.5 deaths per 100,000 women.
- Mortality remained steady for women aged 20–69, at between 1.7 and 2.1 deaths per 100,000 women.
- Mortality remained steady for women of all ages at around 1.5 and 2.0 deaths per 100,000 women.

Mortality for these age groups in 2021 was 2.0, 1.7, and 1.5 respectively.

This decrease in mortality has been accompanied by a decrease in the risk of death from cervical cancer by age 85, from 1 in 165 in 1982, to 1 in 639 in 2021 (AIHW 2023b).

4 Cervical screening outcomes for Aboriginal and Torres Strait Islander participants

It is known that Aboriginal and Torres Strait Islander women experience lower levels of participation in cervical screening and a disproportionately higher burden from cervical cancer than non-Indigenous women.

In Queensland, 2-year participation for 2010–2011 under the previous NCSP was estimated using data linkage to be 33.5% for Aboriginal and Torres Strait Islander women compared to 55.7% for non-Indigenous women (Whop et al. 2016).

Similarly, the most recent cervical screening data from the National Key Performance Indicators (nKPIs) Data Collection show that, as at June 2022, 40% of Aboriginal and Torres Strait Islander regular female clients of Indigenous-specific primary health-care services aged 25–74 who had not had a hysterectomy had a cervical screening test within the previous 5 years (AIHW 2023a).

We know from these and other valued research that Aboriginal and Torres Strait Islander women are not accessing cervical screening at the same level as non-Indigenous women. However, we have not been able to report on cervical screening participation by Indigenous status at the national level because the source of cervical screening data used to be primarily pathology forms, and not all pathology forms in all states and territories include Indigenous status (see Box 4.1. for further information on Indigenous identification on pathology forms).

Box 4.1: COVID-19 and Indigenous identification on pathology forms

Indigenous identification on pathology forms is a longstanding issue.

The COVID-19 pandemic in early 2020 highlighted this as a pertinent issue, as the poor level of Indigenous identification on pathology forms used for COVID-19 testing meant that it was not possible to accurately know how many Aboriginal and Torres Strait Islander peoples were tested for SARS-CoV-2 (the virus that causes COVID-19), and so the true infection rate for Aboriginal and Torres Strait Islander peoples could not be known.

In May 2020, the National Aboriginal Community Controlled Health Organisation (NACCHO) published a submission on the Australian Government's response to the COVID-19 pandemic, which included a recommendation that the Government 'improve data collection practices in Aboriginal and Torres Strait Islander identification so the information can be used to provide accurate reporting on screening and testing programs, and outcomes of testing, including in pathology' (NACCHO 2020).

In line with this, there has been considerable work undertaken by the states and territories to improve Indigenous identification on pathology forms of both public and private pathology laboratories to address the need to be able to accurately identify Aboriginal and Torres Strait Islander peoples on pathology forms for COVID-19 testing.

While this work was performed in response to the COVID-19 pandemic, improved Indigenous identification on pathology forms will also benefit screening and testing programs that rely on pathology forms to enable accurate reporting of outcomes for Aboriginal and Torres Strait Islander peoples, for example cancer and diabetes.

This has been considered a failing, as it has long been recognised that reporting cervical screening participation is essential to monitor the success of initiatives introduced to increase participation in cervical screening for Aboriginal and Torres Strait Islander women, and that it is equally important to report key cervical screening outcomes for Aboriginal and Torres Strait Islander participants.

Progression towards this has for a very long time been a priority for the NCSP. Cervical screening program managers, the Department of Health and Aged Care, and the AIHW have strived towards this with the support of Aboriginal and Torres Strait Islander peoples, NCSP representatives, researchers, clinicians, and cervical screening experts.

Identification of Indigenous status in cervical screening data

The addition of the Medicare Voluntary Indigenous Identifier as a source of Indigenous status for cervical screening data has raised Indigenous status data to a sufficient level of completeness to allow reporting of cervical screening data for Aboriginal and Torres Strait Islander women at the national level.

In addition to Indigenous status from Medicare, the National Cancer Screening Register (NCSR), that is the source of cervical screening and bowel screening data in Australia, also receives Indigenous status from bowel screening participants who are able to self-report their Indigenous status, as well as some Indigenous status data received from pathology and colposcopy forms, along with any Indigenous status data that existed in the previous source of cervical screening data when these were originally migrated into the NCSR in 2017.

Indigenous status used in this report is based on the most recently reported Indigenous status from Medicare or migrated data, supplemented with historical data. For this derived Indigenous status, the history of an individual's Indigenous status is used to supplement the most recently reported Indigenous status with a preference for retaining a status of Aboriginal and/or Torres Strait Islander over non-Indigenous/not stated if there are multiple sources.

Indigenous status most recently reported from Medicare or migrated data, and Indigenous status derived from the most recently reported from Medicare or migrated data supplemented with historical sources of Indigenous status, are shown for participants aged 25–74 screened in 2018–2022 in Table 4.1.

Table 4.1: Participants by Indigenous status, aged 25–74, 2018–2022

Indigenous status	Number
Indigenous status most recently reported	
Aboriginal and/or Torres Strait Islander	93,546
Non-Indigenous	3,357,032
Not stated	1,258,270
Indigenous status derived from most recently reported and historical sources	
Aboriginal and/or Torres Strait Islander	103,037
Non-Indigenous	3,590,181
Not stated	1,015,630
Australia	**4,708,848**

Data are grouped into the categories of 'Aboriginal and/or Torres Strait Islander, 'Non-Indigenous' and 'Not stated'. Aboriginal and/or Torres Strait Islander = 'Aboriginal but not Torres Strait Islander origin', 'Torres Strait Islander but not Aboriginal origin', and 'Both Aboriginal and Torres Strait Islander origin'; Non-Indigenous = 'Neither Aboriginal nor Torres Strait Islander origin' and 'South Sea Islander'; Not stated = 'Declined to answer' and 'Not stated or inadequately described'.

Note*:* Participants are restricted to those who had a screening HPV test (reason for test of primary screening or follow-up HPV test).

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Reporting key performance indicators by Indigenous status

Of the 17 performance indicators that are reported in this report, 6 have been reported by Indigenous status in this report, as indicated in Table 4.2.

Table 4.2: Performance indicators for the National Cervical Screening Program reported by Indigenous status

Screening pathway	Performance indicator	Reported by Indigenous status
Recruitment	1 Participation	×
	2 Response to invitation	×
	3 Rescreening	××
Screening		
Screening	4 Screening results	×
	5 Correlation of screening results	×
Screening HPV test performance	6 Screening HPV test positivity	✓
	7 Cervical cancer diagnosed after a low risk screening test result	××
Self-collection	8 LBC test in self-collection participants positive for oncogenic HPV (not 16/18)	×
	9 Colposcopy in self-collection participants positive for oncogenic HPV 16/18	×
Follow-up	10 Adherence to recommendation for follow-up	×
	11 Follow-up results	×
Assessment	12 Colposcopy rate	✓
	13 Time to colposcopy	✓
	14 Biopsy rate	×
	15 Yield of high-grade abnormalities on biopsy among participants who attend colposcopy with higher risk screening results	×
	16 Positive predictive value of colposcopy	×
Diagnosis	17a High-grade cervical abnormality detection rate	✓
	17b Cervical cancer detection rate	×
Outcomes	18 Cervical cancers diagnosed by time since last screen	××
	19 Incidence of cervical cancer	✓
	20 Mortality from cervical cancer	✓

✓ = reported by Indigenous status; × = not reported by Indigenous status; ×× = not reported at all in this report.

Reporting of these performance indicators has been endorsed by Aboriginal and Torres Strait Islander peoples and by the National Aboriginal Community Controlled Health Organisation (NACCHO).

The performance indicators selected for inclusion in this report are key cervical screening performance indicators for the NCSP, and considered highly relevant to the experience of Aboriginal and Torres Strait Islander participants in cervical screening.

However, it is important that Aboriginal and Torres Strait Islander peoples continue to decide the story that their data should reveal, which in the future may include additional performance indicators reported by Indigenous status, as well as Aboriginal and/or Torres Strait Islander data presented in a different way that best reflects needs and desires.

This is a reflection that Aboriginal and Torres Strait Islander peoples retain ownership over their own cervical screening data and should be involved in decisions about when and how their data are reported, and how these data can best benefit Aboriginal and Torres Strait Islander peoples.

Data sovereignty is a key component of Priority Reform 4 under the National Agreement on Closing the Gap, which will improve and share access to data and information to enable Aboriginal and Torres Strait Islander communities make informed decisions (see Box 4.2).

Box 4.2: Priority Reform 4 under the National Agreement on Closing the Gap

The National Agreement on Closing the Gap was developed in partnership between the Coalition of Aboriginal and Torres Strait Islander Peak Organisations and Australian governments, with the objective to overcome the entrenched inequality faced by too many Aboriginal and Torres Strait Islander people so that their life outcomes are equal to all Australians.

Under this National Agreement, and following the guidance of Aboriginal and Torres Strait Islander people, 4 Priority Reforms have been designed to change the way that governments work with Aboriginal and Torres Strait Islander people.

The Priority Reforms will:

- Strengthen and establish formal partnerships and shared decision-making
- Build the Aboriginal and Torres Strait Islander community-controlled sector
- Transform government organisations so they work better for Aboriginal and Torres Strait Islander people
- Improve and share access to data and information to enable Aboriginal and Torres Strait Islander communities make informed decisions.

Priority Reform 4 Improve and share access to data and information to enable Aboriginal and Torres Strait Islander communities make informed decisions

The purpose of Priority Reform 4 is Aboriginal and Torres Strait Islander data sovereignty.

Supporting Aboriginal and Torres Strait Islander data sovereignty requires governments implementing changes to data systems and practices to enable Aboriginal and Torres Strait Islander people to participate in decision making about data and to use data for their own purposes.

Data and information sharing elements of Priority Reform 4:

- There are partnerships in place between Aboriginal and Torres Strait Islander representatives and government organisations to guide the improved collections, access, management, and use of data to inform shared decision-making for the benefit of Aboriginal and Torres Strait Islander people.
- Governments agree to provide Aboriginal and Torres Strait Islander communities and organisations access to the same data and information on which any decisions are made, subject to meeting privacy requirements, and ensuring data security and integrity.
- Governments collect, handle and report data at sufficient levels of disaggregation, and in an accessible and timely way, to empower local Aboriginal and Torres Strait Islander communities to access, use and interpret data for local decision-making
- Aboriginal and Torres Strait Islander communities and organisations are supported by governments to build capability and expertise in collecting, using, and interpreting data in a meaningful way.

Participation of Aboriginal and Torres Strait Islander women

The standard method used to calculate participation earlier in this report, defined as the number of participants aged 25–74 screened in a 5-year period as a percentage of eligible females in the population, cannot be used to calculate participation by Indigenous status, as Indigenous status in the NCSR is not sufficiently complete.

An alternative methodology for estimating participation in cervical screening by Indigenous status has been developed by Professor John Condon and endorsed by Aboriginal and Torres Strait Islander representatives and NACCHO. This alternative methodology will allow national cervical screening participation by Indigenous status to be reported until such time as the completeness of Indigenous status in the NCSR is sufficiently high to support reporting of participation by Indigenous status using the standard method.

Development and endorsement of this alternative methodology has been a key factor in supporting reporting participation by Indigenous status. However, many factors requiring thorough investigation to ensure the release of robust and meaningful data, have meant that participation by Indigenous status data were not able to be finalised in time for inclusion in this report. It is anticipated that these data will be able to be reported in the near future.

Screening HPV test positivity for Aboriginal and Torres Strait Islander participants

Screening HPV test positivity is the proportion of valid screening HPV tests that detect oncogenic HPV – either oncogenic HPV 16/18 or oncogenic HPV (not 16/18).

To look at the impact of HPV vaccination on screening HPV test positivity, participants are split into those who were offered HPV vaccination (since these participants are more likely to be vaccinated against HPV), and those who were not, based on birth cohort.

People born after 30 June 1980 were considered to have been offered HPV vaccination as these people were eligible for HPV vaccination when the school program commenced in April 2007 and the primary care catch up program commenced in July 2007. People born on or before 30 June 1980 were considered to have not been offered HPV vaccination, as these people were outside the eligible age for HPV vaccination.

For Aboriginal and Torres Strait Islander participants aged 25–74, positivity was:

- 2.4% of valid screening HPV tests for oncogenic HPV 16/18
- 11.5% of valid screening HPV tests for oncogenic HPV (not 16/18)
- 13.9% of valid screening HPV tests for any oncogenic HPV (Figure 4.1).

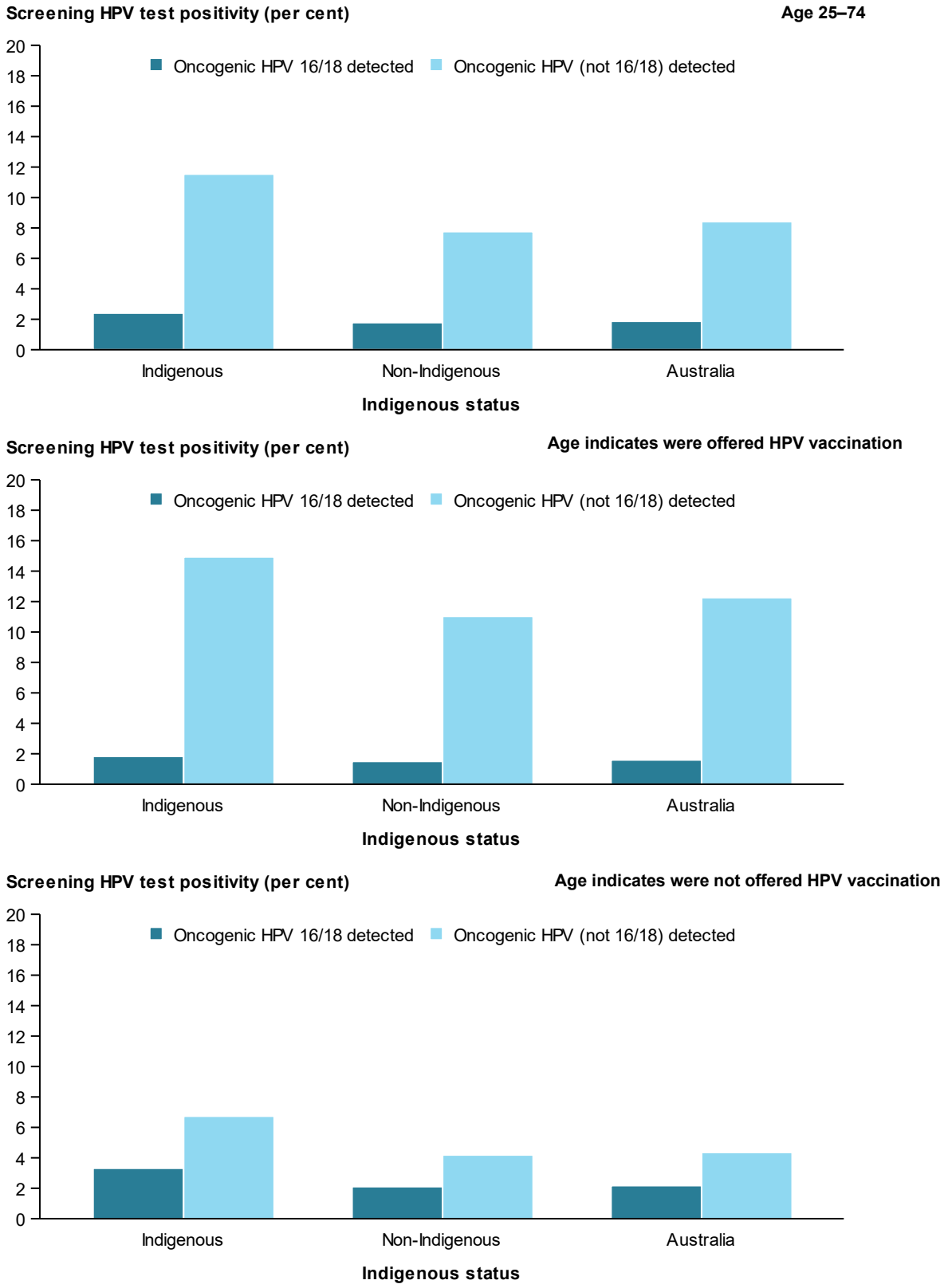
For Aboriginal and Torres Strait Islander participants who were of an age at which HPV vaccination was offered (participants born after 30 June 1980):

- positivity was 1.8% of valid screening HPV tests for oncogenic HPV 16/18
- positivity was 14.9% of valid screening HPV tests for oncogenic HPV (not 16/18)
- positivity was 16.8% of valid screening HPV tests for any oncogenic HPV (Figure 4.1).

For Aboriginal and Torres Strait Islander participants who were of an age at which HPV vaccination was not offered (participants born on or before 30 June 1980), positivity was:

- 3.3% of valid screening HPV tests for oncogenic HPV 16/18
- 6.7% of valid screening HPV tests for oncogenic HPV (not 16/18)
- 10.1% of valid screening HPV tests for any oncogenic HPV (Figure 4.1).

Figure 4.1: Screening HPV test positivity trends, by birth cohort, by Indigenous status, 2022



Note: Aboriginal and Torres Strait Islander participants are respectfully referred to as Indigenous participants in this figure.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table 4.4.

These results indicate that:

- screening HPV test positivity for oncogenic HPV 16/18 is lower in Aboriginal and/or Torres Strait Islander participants who had been offered HPV vaccination; and
- screening HPV test positivity for oncogenic HPV (not 16/18) is higher in Aboriginal and/or Torres Strait Islander participants who had been offered HPV vaccination.

As noted earlier in the Positivity chapter, this is an expected result for all participants (Aboriginal and/or Torres Strait Islander participants and non-Indigenous participants).

This is because the occurrence of HPV is higher in this younger age group (born after 30 June 1980), and vaccination will only have an impact on the positivity of HPV 16/18, as only HPV 16 and 18 were included in the HPV vaccine that the majority of the current cervical screening participants would have received (Brotherton et al. 2019).

Positivity for oncogenic HPV (not 16/18) will not be impacted by vaccination with an HPV vaccine that only includes HPV 16 and 18, and so remains higher for these participants.

Colposcopy rate for Aboriginal and Torres Strait Islander participants

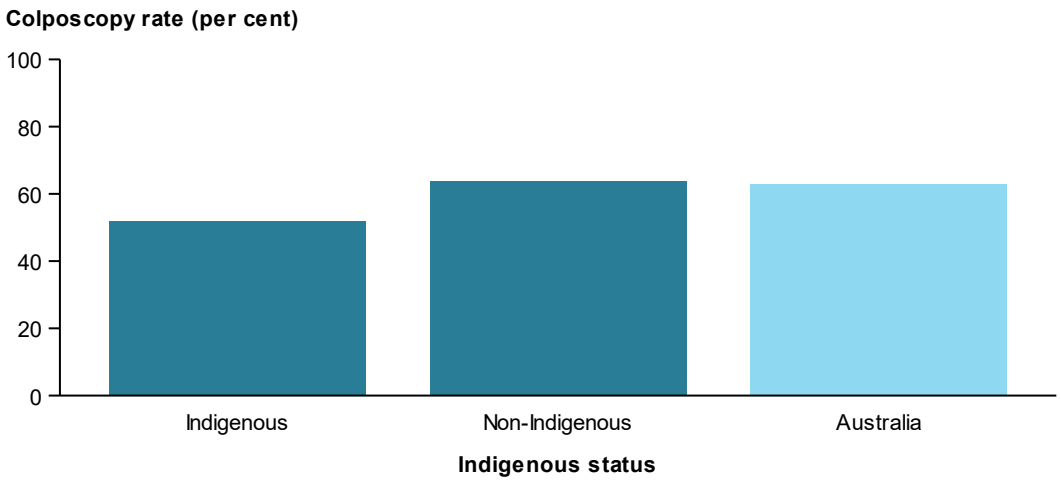
Colposcopy is the examination of the cervix using a magnifying instrument called a colposcope. Colposcopy is the first step in the assessment pathway and is performed where there is a higher risk of a significant cervical abnormality.

The colposcopy rate is the proportion of participants who are at higher risk of a significant cervical abnormality who have a colposcopy within 3 months.

In 2021, there were 563 Aboriginal and Torres Strait Islander participants aged 25–74 who were considered higher risk due to their screening episode, first follow-up episode, or second follow-up episode result, and would therefore be recommended for colposcopy.

Of these higher risk Aboriginal and Torres Strait Islander participants, 50.6% had a colposcopy within 3 months (Figure 4.2).

Figure 4.2: Colposcopy rate, by Indigenous status, participants aged 25–74, 2021



Note: Participants whose first follow-up HPV test result was oncogenic HPV (not 16/18) and whose reflex LBC test result was a negative or low-grade are managed as higher risk instead of intermediate risk if they are 2 or more years overdue for screening, identify as Aboriginal and/or Torres Strait Islander, or aged 50 or over. However, higher risk is based on test results without considering characteristics of the participants, so these participants are not included as higher risk in this performance indicator.

Aboriginal and Torres Strait Islander participants are respectfully referred to as Indigenous participants in this figure.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table 4.5.

Median time to colposcopy was also calculated.

In 2021, the median time to colposcopy for Aboriginal and Torres Strait Islander participants was 74 days (Table 4.3).

Table 4.3: Time to colposcopy, by Indigenous status, participants aged 25–74, 2021

Indigenous status	Median	90th percentile
Indigenous	74	342
Non-Indigenous	56	244
Australia	**56**	**244**

Note: Aboriginal and Torres Strait Islander participants are respectfully referred to as Indigenous participants in this table.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

High-grade cervical abnormality detection for Aboriginal and Torres Strait Islander participants

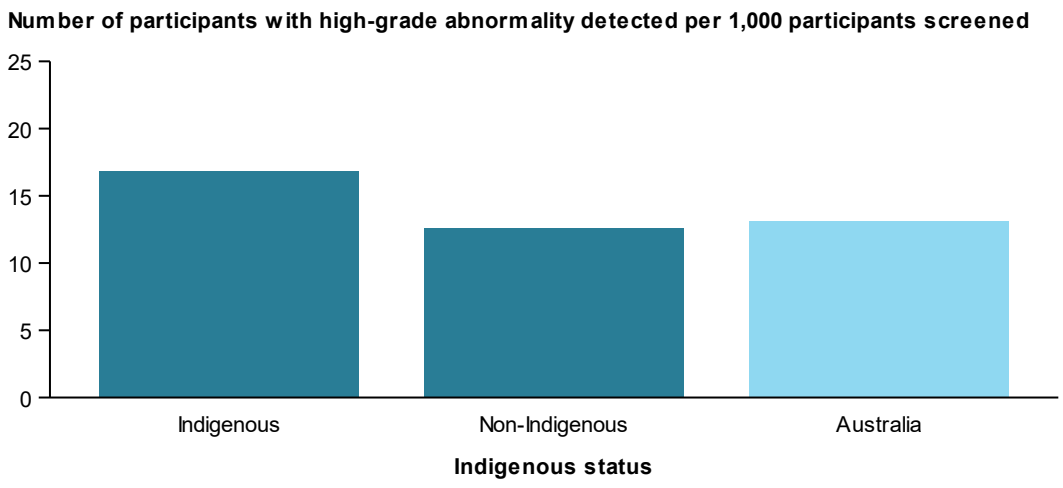
High-grade cervical abnormality detection is the proportion of participants screened that have a high-grade abnormality detected on histology.

The detection of high-grade abnormalities is an indicator of program performance. Detection of high-grade abnormalities provides an opportunity for treatment before cancer can develop, thus the NCSP aims to detect high-grade abnormalities in line with its broader aim to reduce the incidence of cervical cancer.

In 2022, there were 449 Aboriginal and Torres Strait Islander participants aged 25–74 with a high-grade abnormality detected on histology, which is 19.6 participants with a high-grade abnormality detected per 1,000 participants screened.

This means that, for every 1,000 Aboriginal and Torres Strait Islander participants screened, 20 had a high-grade abnormality detected, providing an opportunity for treatment prior to any possible progression to cervical cancer.

Figure 4.3: High-grade cervical abnormality detection, by Indigenous status, participants aged 25–74, 2022



Note: Aboriginal and Torres Strait Islander participants are respectfully referred to as Indigenous participants in this figure.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023). Data and notes for this figure are available in Table 4.6.

Incidence of cervical cancer for Aboriginal and Torres Strait Islander women

Incidence is the number of new cases of cervical cancer per 100,000 population.

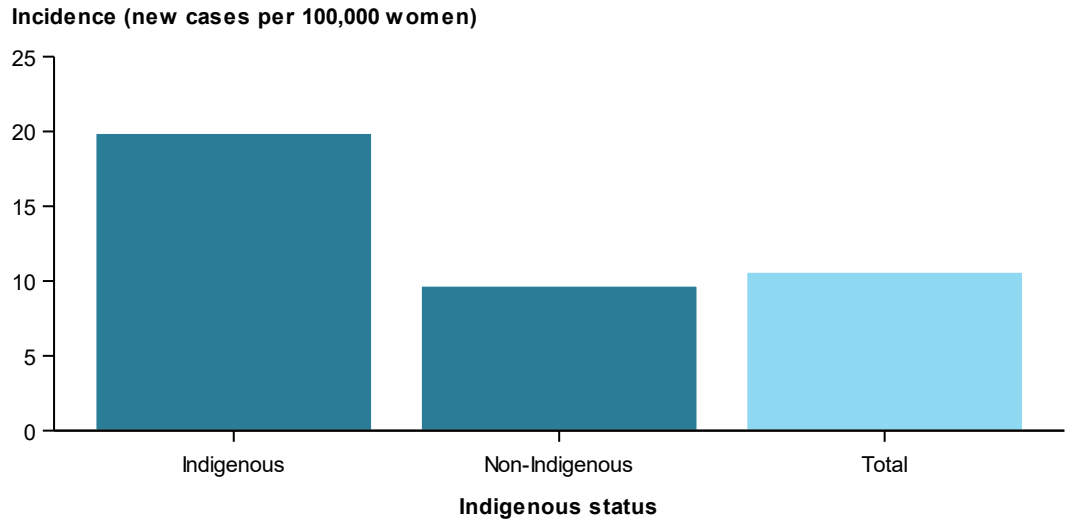
Reliable national data on the diagnosis of cervical cancer for Aboriginal and Torres Strait Islander peoples are not available. All state and territory cancer registries collect information on Indigenous status; however, in some jurisdictions, the quality of the data is insufficient for analysis. Data for cervical cancer incidence by Indigenous status are only included for New South Wales, Victoria, Queensland, Western Australia, the Australian Capital Territory, and the Northern Territory. Data are not included for South Australia or Tasmania because the Indigenous status variable is not of sufficient quality in these jurisdictions.

The incidence counts and rates for Aboriginal and Torres Strait Islander women and non-Indigenous women presented are underestimates due to the relatively large proportion of women whose Indigenous status is not stated, or not available. Also, it is likely that some Aboriginal and Torres Strait Islander women are misclassified as non-Indigenous. Therefore, the estimates presented should be interpreted with caution.

Analysis of data from these jurisdictions showed that, over the 5 years 2015–2019, there were 167 Aboriginal and Torres Strait Islander women aged 25–74 diagnosed with cervical cancer, equating to 19.3 new cases per 100,000 females in the population.

After adjusting for age, incidence among Aboriginal and Torres Strait Islander women was 2.1 times the rate of non-Indigenous women over the 5 years 2015–2019 for women aged 25–74 (19.9 and 9.7 new cases per 100,000 females in the population, respectively) (Figure 4.4).

Figure 4.4: Cervical cancer incidence (New South Wales, Victoria, Queensland, Western Australia, the Australian Capital Territory, and the Northern Territory), by Indigenous status, women aged 25–74, 2015–2019



Note: Data shown for 'Aboriginal and Torres Strait Islander, 'Non-Indigenous' and 'Total' are for New South Wales, Victoria, Queensland, Western Australia, the Australian Capital Territory, and the Northern Territory only; data from these jurisdictions were considered to have adequate levels of Indigenous identification in cancer registration data at the time this report was prepared.

Aboriginal and Torres Strait Islander women are respectfully referred to as Indigenous women in this figure.

Source: AIHW Australian Cancer Database 2019. Data and notes for this figure are available in Table 4.7.

Mortality from cervical cancer for Aboriginal and Torres Strait Islander women

Mortality is the number of deaths from cervical cancer per 100,000 population.

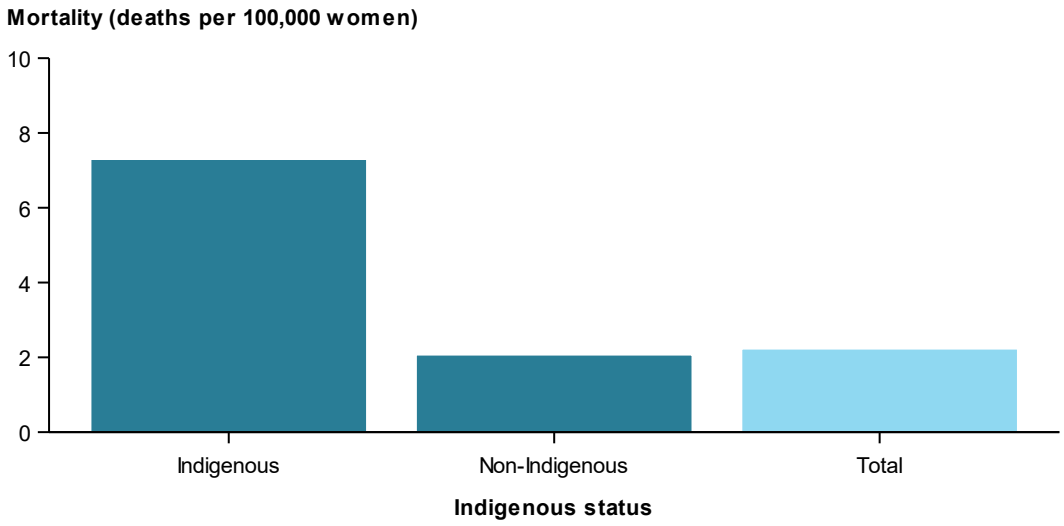
Only mortality data from New South Wales, Queensland, Western Australia, South Australia, and the Northern Territory are considered adequate for reporting by Indigenous status. Other jurisdictions have a small number of Indigenous deaths, and the identification of these in their death registration systems is relatively poor, making the data less reliable. Note that these jurisdictions differ from those used to calculate incidence by Indigenous status. See Box 4.3 for information on rates calculated using Indigenous population estimates from the 2016 Census.

Over the 5 years 2017–2021 there were 65 Aboriginal and Torres Strait Islander women aged 25–74 who died from cervical cancer in Australia.

Over the 5 years 2017–2021, there were 58 Aboriginal and Torres Strait Islander women aged 25–74 who died from cervical cancer in New South Wales, Queensland, Western Australia, South Australia, and the Northern Territory, which equates to 6.6 deaths per 100,000 women in the population.

After adjusting for age, mortality among Aboriginal and Torres Strait Islander women in New South Wales, Queensland, Western Australia, South Australia, and the Northern Territory was 3.5 times the rate of non-Indigenous women over the 5 years 2017–2021 for women aged 25–74 (7.3 and 2.1 deaths per 100,000 women in the population, respectively) (Figure 4.5).

Figure 4.5: Cervical cancer mortality (New South Wales, Queensland, Western Australia, South Australia, and the Northern Territory), by Indigenous status, women aged 25–74, 2017–2021



Note: Data shown for 'Indigenous', 'Non-Indigenous' and 'Total' are for New South Wales, Queensland, Western Australia, South Australia, and the Northern Territory only; data from these jurisdictions were considered to have adequate levels of Indigenous identification in cancer mortality data at the time this report was prepared.

Aboriginal and Torres Strait Islander women are respectfully referred to as Indigenous women in this figure.

Source: AIHW National Mortality Database. Data and notes for this figure are available in Table 4.8.

Box 4.3: Aboriginal and Torres Strait Islander incidence and mortality: populations and rates

To derive cervical cancer incidence and mortality rates for Aboriginal and Torres Strait Islander peoples, this report used Indigenous population estimates and projections based on the 2016 Census, which were the most recent estimates available when this report was prepared.

The final estimated resident Indigenous population as at 30 June 2016 was 19% larger than the estimated population as at 30 June 2011 (ABS 2018). The Australian Bureau of Statistics notes that the population increase is greater than demographic factors alone can explain. In addition, the 2016 estimated population was 7% larger than the 2016 projected population based on the 2011 Census.

The extent of the increase in the Indigenous population estimates between 2011 and 2016 means that any rates calculated with Indigenous population estimates based on the 2016 Census will be lower than those based on the 2011 Census and should not be compared with rates calculated using populations based on previous Censuses.

Indigenous population estimates based on the 2021 Census are expected to be released in the second half of 2024.

Table 4.4: Screening HPV test positivity, by Indigenous status and birth cohort, 2022

	Screening HPV test positivity					
	Oncogenic HPV 16/18 detected		Oncogenic HPV (not 16/18) detected		Oncogenic HPV (any type) detected	
Indigenous status	**Number**	**Positivity (%)**	**Number**	**Positivity (%)**	**Number**	**Positivity (%)**
Age 25–74						
Indigenous	285	2.4	1,365	11.5	1,650	13.9
Non-Indigenous	6,390	1.8	27,784	7.8	34,174	9.5
Not stated	2,307	2.1	11,320	10.2	13,627	12.3
Australia	**8,982**	**1.9**	**40,469**	**8.4**	**49,451**	**10.3**
Age indicates were offered HPV vaccination[(a)]						
Indigenous	135	1.8	1,101	14.9	1,236	16.8
Non-Indigenous	2,892	1.5	21,285	11.0	24,177	12.5
Not stated	1,119	1.9	9,520	15.9	10,639	17.8
Australia	**4,146**	**1.6**	**31,906**	**12.3**	**36,052**	**13.9**
Age indicates were not offered HPV vaccination[(b)]						
Indigenous	155	3.3	315	6.7	470	10.1
Non-Indigenous	3,551	2.1	7,065	4.2	10,616	6.3
Not stated	1,244	2.3	2,534	4.7	3,778	7.0
Australia	**4,950**	**2.2**	**9,914**	**4.4**	**14,864**	**6.5**

(a) Participants born after 30 June 1980 were considered to have been offered HPV vaccination as these participants were eligible for the school or catch-up program during 2007.

(b) Participants born on or before 30 June 1980 were considered to have not been offered HPV vaccination, as these participants were outside the eligible age for HPV vaccination.

Notes:

1. Participants were allocated to an Indigenous status from the NCSR according to a derived Indigenous status based on last Indigenous status identified in the NCSR from the Medicare VII and migrated data, supplemented with historical Indigenous status sources, grouped into Indigenous, non-Indigenous, and not stated.
2. Aboriginal and Torres Strait Islander participants are respectfully referred to as Indigenous participants in this table.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table 4.5: Colposcopy rate, by Indigenous status, participants aged 25–74, 2021

Indigenous status	Number of colposcopies	Crude rate (%)	AS rate (%)
Indigenous	285	50.6	51.9
Non-Indigenous	8,912	63.5	63.8
Not stated	2,948	61.3	61.2
Australia	**12,145**	**62.6**	**62.9**

Notes:

1. Crude rate is the number of participants who have a colposcopy within 3 months as a per cent of the number of participants who are at higher risk of a significant cervical abnormality. Age-standardised (AS) rate is the number of participants who have a colposcopy within 3 months as a per cent of the number of participants who are at higher risk of a significant cervical abnormality, age-standardised to the Australian population as at 30 June 2001.
2. Participants were allocated to an Indigenous status from the NCSR according to a derived Indigenous status based on last Indigenous status identified in the NCSR from the Medicare VII and migrated data, supplemented with historical Indigenous status sources, grouped into Indigenous, non-Indigenous, and not stated.
3. Aboriginal and Torres Strait Islander participants are respectfully referred to as Indigenous participants in this table.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table 4.6: High-grade cervical abnormality detection, by Indigenous status, participants aged 25–74, 2022

Indigenous status	Number participants with high-grade abnormality detected	Number participants screened	Number participants with high-grade abnormality detected per 1,000 participants screened	
			Crude rate	AS rate
Indigenous	449	22,920	19.6	16.8
Non-Indigenous	8,880	646,333	13.7	12.6
Not stated	3,066	200,808	15.3	14.5
Australia	**12,395**	**870,061**	**14.2**	**13.1**

Notes:

1. Crude rate is the number of participants with a high-grade abnormality detected on histology per 1,000 participants screened. Age-standardised (AS) rate is the number of participants with a high-grade abnormality detected on histology per 1,000 participants screened, age-standardised to the Australian population as at 30 June 2001.
2. Participants were allocated to an Indigenous status from the NCSR according to a derived Indigenous status based on last Indigenous status identified in the NCSR from the Medicare VII and migrated data, supplemented with historical Indigenous status sources, grouped into Indigenous, non-Indigenous, and not stated.
3. Aboriginal and Torres Strait Islander participants are respectfully referred to as Indigenous participants in this table.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table 4.7: Cervical cancer incidence, by Indigenous status (New South Wales, Victoria, Queensland, Western Australia, the Australian Capital Territory, and the Northern Territory), women aged 25–74, 2015–2019

Indigenous status	New cases	Crude rate	AS rate
Indigenous	167	19.3	19.9
Non-Indigenous	3,204	9.5	9.7
Not stated	226	. .	. .
Total	**3,597**	**10.4**	**10.6**

Notes

1. Data shown are for New South Wales, Victoria, Queensland, Western Australia, the Australian Capital Territory, and the Northern Territory only; data from these jurisdictions were considered to have adequate levels of Indigenous identification in cancer registration data at the time this report was prepared.
2. Some states and territories use an imputation method for determining Indigenous cancers, which may lead to differences between these data and those shown in jurisdictional cancer incidence reports.
3. Crude rate is the number of new cases of cervical cancer per 100,000 females in the population. Age-standardised (AS) rate is the number of new cases of cervical cancer per 100,000 females in the population, age-standardised to the Australian population as at 30 June 2001.
4. Aboriginal and Torres Strait Islander women are respectfully referred to as Indigenous women in this table.

Source: AIHW Australian Cancer Database 2019.

Table 4.8: Cervical cancer mortality, by Indigenous status (New South Wales, Queensland, Western Australia, South Australia, and the Northern Territory), women aged 25–74, 2017–2021

	Australia	NSW, Qld, WA, SA, and NT		
Indigenous status	**Deaths**	**Deaths**	**Crude rate**	**AS rate**
Indigenous	65	58	6.6	7.3
Non-Indigenous	789	588	2.2	2.1
Not stated	8	4	. .	. .
Total	**862**	**650**	**2.3**	**2.2**

Notes

1. Data shown for Australia' are for all states and territories combined; data shown for 'NSW, Qld, WA, SA, and NT' are for New South Wales, Queensland, Western Australia, South Australia, and the Northern Territory only; data from these jurisdictions were considered to have adequate levels of Indigenous identification in cancer mortality data at the time this report was prepared.
2. Deaths from 2017 to 2020 were derived by year of death; deaths in 2021 were derived by year of registration of death. Deaths registered in 2018 and earlier are based on the final version of cause-of-death data; deaths registered in 2019 are based on revised versions; and deaths registered in 2020 and 2021 are based on preliminary versions. Revised and preliminary versions are subject to further revision by the ABS.
3. Crude rate is the number of deaths from cervical cancer per 100,000 females in the population. Age-standardised (AS) rate is the number of deaths from cervical cancer per 100,000 females in the population, age-standardised to the Australian population as at 30 June 2001.
4. Aboriginal and Torres Strait Islander women are respectfully referred to as Indigenous women in this table.

Source: AIHW National Mortality Database.

Appendix A: Additional data tables

A1 Participation

Table A1.1: Participation, by age, 2018–2022

Age group	Number	Crude rate (%)
<25	86,647	. .
25–29	732,337	79.5
30–34	646,933	68.3
35–39	599,655	68.0
40–44	527,038	69.7
45–49	528,065	73.0
50–54	458,498	70.5
55–59	427,608	70.3
60–64	365,320	67.5
65–69	285,065	62.2
70–74	138,329	34.9
75+	12,085	. .
25–74	**4,708,848**	**68.4**
All ages	**4,807,580**	**. .**

Notes

1. Number is the number of participants who had a screening HPV test (reason for test of primary screening or follow-up HPV test) between 1 January 2018 and 31 December 2022. Excludes current Compass participants.
2. Crude rate is the number of participants who had a screening HPV test (reason for test of primary screening or follow-up HPV test) between 1 January 2018 and 31 December 2022 as a percentage of the average ABS estimated resident population for females aged 25–74 in 2018, 2019, 2020, 2021, and 2022, adjusted to exclude the estimated number of females who have had a hysterectomy (using age-specific hysterectomy fractions derived from the AIHW National Hospitals Morbidity Database).

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A1.2: Participation, by state and territory, participants aged 25–74, 2018–2022

State and territory	Number	Crude rate (%)	AS rate (%)
NSW	1,458,770	67.4	67.5
Vic	1,244,114	69.6	69.7
Qld	935,496	67.7	67.8
WA	499,694	68.7	68.7
SA	331,742	69.5	70.1
Tas	102,495	67.7	68.6
ACT	87,529	71.0	70.9
NT	46,912	68.5	67.0
Australia	**4,708,848**	**68.4**	**68.5**

Notes

1. Number is the number of participants who had a screening HPV test (reason for test of primary screening or follow-up HPV test) between 1 January 2018 and 31 December 2022. Excludes current Compass participants.
2. Crude rate is the number of participants who had a screening HPV test (reason for test of primary screening or follow-up HPV test) between 1 January 2018 and 31 December 2022 as a percentage of the average ABS estimated resident population for females aged 25–74 in 2018, 2019, 2020, 2021, and 2022, adjusted to exclude the estimated number of participants who have had a hysterectomy (using age-specific hysterectomy fractions derived from the AIHW National Hospitals Morbidity Database).
3. Age-standardised (AS) rate is the crude rate, age-standardised to the Australian population at 30 June 2001.
4. State and territory is the state or territory of residence of the participant, which may be different to the state or territory in which the screen took place. Direct comparisons between the states and territories of Australia are not advised, due to the substantial differences that exist between the jurisdictions, including population, area, geographical structure, policies, and other factors.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A1.3: Participation, by remoteness area, participants aged 25–74, 2018–2022

Remoteness area	Number	Crude rate (%)	AS rate (%)
Major cities	3,482,666	69.7	69.6
Inner regional	791,977	65.6	66.6
Outer regional	351,430	64.6	65.5
Remote	50,396	64.6	64.2
Very remote	29,377	59.7	58.7
Australia	**4,708,848**	**68.4**	**68.5**

Notes

1. Number is the number of participants who had a screening HPV test (reason for test of primary screening or follow-up HPV test) between 1 January 2018 and 31 December 2022. Excludes current Compass participants.
2. Crude rate is the number of participants who had a screening HPV test (reason for test of primary screening or follow-up HPV test) between 1 January 2018 and 31 December 2022 as a percentage of the average ABS estimated resident population for females aged 25–74 in 2018, 2019, 2020, and 2021, adjusted to exclude the estimated number of participants who have had a hysterectomy (using age-specific hysterectomy fractions derived from the AIHW National Hospitals Morbidity Database).
3. Age-standardised (AS) rate is the crude rate, age-standardised to the Australian population at 30 June 2001.
4. Participants were allocated to a remoteness area using their SA2 at the time of their screen (or postcode where SA2 was not available) according to the Australian Statistical Geography Standard (ASGS) for 2016.
5. Australia does not match the total number of participants across different remoteness areas because some participants were not able to be allocated to a remoteness area.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A1.4: Participation, by socioeconomic area, participants aged 25–74, 2018–2022

Socioeconomic area	Number	Crude rate (%)	AS rate (%)
1 (most disadvantaged)	789,690	61.5	61.9
2	866,148	64.4	64.8
3	948,046	67.5	67.5
4	1,023,660	71.0	70.7
5 (least disadvantaged)	1,077,337	77.3	77.4
Australia	**4,708,848**	**68.4**	**68.5**

Notes

1. Number is the number of participants who had a screening HPV test (reason for test of primary screening or follow-up HPV test) between 1 January 2018 and 31 December 2022. Excludes current Compass participants.
2. Crude rate is the number of participants who had a screening HPV test (reason for test of primary screening or follow-up HPV test) between 1 January 2018 and 31 December 2022 as a percentage of the average ABS estimated resident population for females aged 25–74 in 2018, 2019, 2020, and 2021, adjusted to exclude the estimated number of participants who have had a hysterectomy (using age-specific hysterectomy fractions derived from the AIHW National Hospitals Morbidity Database).
3. Age-standardised (AS) rate is the crude rate, age-standardised to the Australian population at 30 June 2001.
4. Participants were allocated to a socioeconomic area using their SA2 at the time of their screen (or postcode where SA2 was not available), according to the Socio-Economic Indexes for Areas (SEIFA) Index of Relative Socio-Economic Disadvantage for 2016.
5. Australia does not match the total number of participants across different socioeconomic areas because some participants were not able to be allocated to a socioeconomic area.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A1.5: Participants, progression towards 5-year participation, by age, 2018, 2018–2019, 2018–2020, 2018–2021, and 2018–2022

	Year				
Age group	**2018**	**2018–2019**	**2018–2020**	**2018–2021**	**2018–2022**
25–29	201,094	389,702	515,866	626,467	732,337
30–34	217,733	415,665	517,531	589,959	646,933
35–39	206,156	397,505	484,139	547,061	599,655
40–44	188,402	363,606	436,060	485,214	527,038
45–49	194,935	375,694	446,148	491,424	528,065
50–54	170,750	330,262	387,765	425,571	458,498
55–59	164,465	320,031	368,960	399,462	427,608
60–64	140,133	274,832	313,740	339,454	365,320
65–69	111,580	217,789	245,415	264,222	285,065
70–74	34,445	87,805	104,365	121,795	138,329
25–74	**1,629,693**	**3,172,891**	**3,819,989**	**4,290,629**	**4,708,848**

Note: Number is the number of participants who had a screening HPV test (reason for test of primary screening or follow-up HPV test) between 1 January 2018 and 31 December 2018 or between 1 January 2018 and 31 December 2019 or between 1 January 2018 and 31 December 2020 or between 1 January 2018 and 31 December 2021 or between 1 January 2018 and 31 December 2022. Excludes current Compass participants.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A1.6: Progression towards 5-year participation, by age, 2018, 2018–2019, 2018–2020, 2018–2021, and 2018–2022

	Year				
Age group	**2018**	**2018–2019**	**2018–2020**	**2018–2021**	**2018–2022**
25–29	21.8	42.3	56.0	68.0	79.5
30–34	23.0	43.9	54.6	62.3	68.3
35–39	23.4	45.1	54.9	62.0	68.0
40–44	24.9	48.1	57.6	64.1	69.7
45–49	27.0	52.0	61.7	68.0	73.0
50–54	26.3	50.8	59.6	65.4	70.5
55–59	27.0	52.6	60.7	65.7	70.3
60–64	25.9	50.8	58.0	62.7	67.5
65–69	24.4	47.6	53.6	57.7	62.2
70–74	8.7	22.2	26.4	30.8	34.9
25–74	**23.7**	**46.1**	**55.5**	**62.3**	**68.4**

Note: Crude rate is the number of participants who had a screening HPV test (reason for test of primary screening or follow-up HPV test) between 1 January 2018 and 31 December 2018 or between 1 January 2018 and 31 December 2019 or between 1 January 2018 and 31 December 2020 or between 1 January 2018 and 31 December 2021 or between 1 January 2018 and 31 December 2022 as a percentage of the average of the ABS estimated resident population for females aged 25–74 over the 5 years 2018–2022, adjusted to exclude the estimated number of participants who have had a hysterectomy (using age-specific hysterectomy fractions derived from the AIHW National Hospitals Morbidity Database). Excludes current Compass participants.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A1.7: Participants, progression towards 5-year participation, by state and territory, 2018, 2018–2019, 2018–2020, 2018–2021, and 2018–2022

	Year				
State and territory	**2018**	**2018–2019**	**2018–2020**	**2018–2021**	**2018–2022**
NSW	500,310	969,612	1,181,133	1,324,865	1,458,770
Vic	432,792	844,458	1,002,139	1,130,966	1,244,114
Qld	319,762	627,965	759,093	854,491	935,496
WA	175,493	341,072	409,662	457,901	499,694
SA	120,701	233,643	277,036	306,080	331,742
Tas	35,747	68,313	82,238	93,004	102,495
ACT	28,496	56,543	69,889	78,953	87,529
NT	15,585	29,833	37,168	42,479	46,912
Australia	**1,629,693**	**3,172,891**	**3,819,989**	**4,290,629**	**4,708,848**

Notes

1. Number is the number of participants who had a screening HPV test (reason for test of primary screening or follow-up HPV test) between 1 January 2018 and 31 December 2018 or between 1 January 2018 and 31 December 2019 or between 1 January 2018 and 31 December 2020 or between 1 January 2018 and 31 December 2021 or between 1 January 2018 and 31 December 2022. Excludes current Compass participants.
2. State and territory is the state or territory of residence of the participant, which may be different to the state or territory in which the screen took place. Direct comparisons between the states and territories of Australia are not advised, due to the substantial differences that exist between the jurisdictions, including population, area, geographical structure, policies, and other factors.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A1.8: Progression towards 5-year participation, by state and territory, 2018, 2018–2019, 2018–2020, 2018–2021, and 2018–2022

	Year									
	2018		**2018–2019**		**2018–2020**		**2018–2021**		**2018–2022**	
State and territory	**Crude rate**	**AS rate**	**Crude rate**	**AS rate**	**Crude rate**	**AS rate**	**Crude rate**	**AS rate**	**Crude rate**	**AS rate**
NSW	23.1	23.3	44.8	45.0	54.6	54.8	61.2	61.4	67.4	67.5
Vic	24.2	24.4	47.2	47.7	56.1	56.4	63.3	63.5	69.6	69.7
Qld	23.1	23.2	45.4	45.6	54.9	55.1	61.8	62.0	67.7	67.8
WA	24.1	24.2	46.9	47.0	56.3	56.4	63.0	63.0	68.7	68.7
SA	25.3	25.5	49.0	49.3	58.1	58.5	64.1	64.7	69.5	70.1
Tas	23.6	23.9	45.2	45.6	54.4	55.1	61.5	62.3	67.7	68.6
ACT	23.1	23.4	45.9	46.5	56.7	57.1	64.1	64.2	71.0	70.9
NT	22.8	22.4	43.6	43.2	54.3	53.6	62.1	60.9	68.5	67.0
Australia	**23.7**	**23.8**	**46.1**	**46.4**	**55.5**	**55.7**	**62.3**	**62.5**	**68.4**	**68.5**

Notes

1. Crude rate is the number of participants who had a screening HPV test (reason for test of primary screening or follow-up HPV test) between 1 January 2018 and 31 December 2018 or between 1 January 2018 and 31 December 2019 or between 1 January 2018 and 31 December 2020 or between 1 January 2018 and 31 December 2021 or between 1 January 2018 and 31 December 2022 as a percentage of the average of the ABS estimated resident population for females aged 25–74 over the 5 years 2018–2022, adjusted to exclude the estimated number of participants who have had a hysterectomy (using age-specific hysterectomy fractions derived from the AIHW National Hospitals Morbidity Database). Excludes current Compass participants.
2. Age-standardised (AS) rate is the crude rate, age-standardised to the Australian population at 30 June 2001.
3. State and territory is the state or territory of residence of the participant, which may be different to the state or territory in which the screen took place. Direct comparisons between the states and territories of Australia are not advised, due to the substantial differences that exist between the jurisdictions, including population, area, geographical structure, policies, and other factors.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A1.9: Coverage, by age, 2018–2022

Age group	Number	Crude rate (%)
<25	193,582	. .
25–29	805,800	87.4
30–34	729,850	77.1
35–39	684,031	77.6
40–44	603,440	79.8
45–49	603,172	83.4
50–54	516,854	79.5
55–59	472,271	77.7
60–64	396,940	73.4
65–69	307,989	67.2
70–74	153,845	38.9
75+	26,290	. .
25–74	**5,274,192**	**76.6**
All ages	**5,494,064**	**. .**

Notes

1. Number is the number of participants who had an HPV or LBC test for any reason between 1 January 2018 and 31 December 2022. Excludes current Compass participants.
2. Crude rate is the number of participants who had an HPV or LBC test for any reason between 1 January 2018 and 31 December 2022 as a percentage of the average ABS estimated resident population for females aged 25–74 in 2018, 2019, 2020, 2021, and 2022, adjusted to exclude the estimated number of participants who have had a hysterectomy (using age-specific hysterectomy fractions derived from the AIHW National Hospitals Morbidity Database).

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A1.10: Coverage, by state and territory, participants aged 25–74, 2018–2022

State and territory	Number	Crude rate (%)	AS rate (%)
NSW	1,651,825	76.3	76.6
Vic	1,373,373	76.8	77.1
Qld	1,056,731	76.4	76.7
WA	556,232	76.5	76.5
SA	370,093	77.6	78.4
Tas	112,192	74.2	75.4
ACT	98,054	79.6	79.5
NT	52,500	76.7	75.2
Australia	**5,274,192**	**76.6**	**76.9**

Notes

1. Number is the number of participants who had an HPV or LBC test for any reason between 1 January 2018 and 31 December 2022. Excludes current Compass participants.
2. Crude rate is the number of participants who had an HPV or LBC test for any reason between 1 January 2018 and 31 December 2022 as a percentage of the average ABS estimated resident population for females aged 25–74 in 2018, 2019, 2020, 2021, and 2022, adjusted to exclude the estimated number of participants who have had a hysterectomy (using age-specific hysterectomy fractions derived from the AIHW National Hospitals Morbidity Database).
3. Age-standardised (AS) rate is the crude rate, age-standardised to the Australian population at 30 June 2001.
4. State and territory is the state or territory of residence of the participant, which may be different to the state or territory in which the screen took place. Direct comparisons between the states and territories of Australia are not advised, due to the substantial differences that exist between the jurisdictions, including population, area, geographical structure, policies, and other factors.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A1.11: Coverage, by remoteness area, participants aged 25–74, 2018–2022

Remoteness area	Number	Crude rate (%)	AS rate (%)
Major cities	3,890,121	77.9	77.8
Inner regional	892,799	73.9	75.3
Outer regional	397,003	73.0	74.3
Remote	56,892	72.9	72.6
Very remote	33,039	67.1	66.1
Australia	**5,274,192**	**76.6**	**76.9**

Notes

1. Number is the number of participants who had an HPV or LBC test for any reason between 1 January 2018 and 31 December 2022. Excludes current Compass participants.
2. Crude rate is the number of participants who had an HPV or LBC test for any reason between 1 January 2018 and 31 December 2022 as a percentage of the average ABS estimated resident population for females aged 25–74 in 2018, 2019, 2020, and 2021, adjusted to exclude the estimated number of participants who have had a hysterectomy (using age-specific hysterectomy fractions derived from the AIHW National Hospitals Morbidity Database).
3. Age-standardised (AS) rate is the crude rate, age-standardised to the Australian population at 30 June 2001.
4. Participants were allocated to a remoteness area using their SA2 at the time of their screen (or postcode where SA2 was not available) according to the Australian Statistical Geography Standard (ASGS) for 2016.
5. Australia does not match the total number of participants across different remoteness areas because some participants were not able to be allocated to a remoteness area.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A1.12: Coverage, by socioeconomic area, participants aged 25–74, 2018–2022

Socioeconomic area	Number	Crude rate (%)	AS rate (%)
1 (most disadvantaged)	886,836	69.1	69.7
2	974,259	72.4	73.1
3	1,063,791	75.7	75.9
4	1,142,527	79.2	78.9
5 (least disadvantaged)	1,201,310	86.2	86.3
Australia	**5,274,192**	**76.6**	**76.9**

Notes

1. Number is the number of participants who had an HPV or LBC test for any reason between 1 January 2018 and 31 December 2022. Excludes current Compass participants.
2. Crude rate is the number of participants who had an HPV or LBC test for any reason between 1 January 2018 and 31 December 2022 as a percentage of the average ABS estimated resident population for females aged 25–74 in 2018, 2019, 2020, and 2021, adjusted to exclude the estimated number of participants who have had a hysterectomy (using age-specific hysterectomy fractions derived from the AIHW National Hospitals Morbidity Database).
3. Age-standardised (AS) rate is the crude rate, age-standardised to the Australian population at 30 June 2001.
4. Participants were allocated to a socioeconomic area using their SA2 at the time of their screen (or postcode where SA2 was not available), according to the Socio-Economic Indexes for Areas (SEIFA) Index of Relative Socio-Economic Disadvantage for 2016.
5. Australia does not match the total number of participants across different socioeconomic areas because some participants were not able to be allocated to a socioeconomic area.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A1.13: Reason for HPV test and reason for LBC test, participants aged 25–74, 2018–2022

Reason for HPV test	Number	Per cent
Primary screening HPV test	4,787,749	69.9
Follow-up HPV test (Repeat HPV test after intermediate risk result)	550,409	8.0
Co-test – test of cure	398,020	5.8
Co-test – investigation of signs or symptoms	560,768	8.2
Co-test – other, as recommended in guidelines	136,531	2.0
Other	263,356	3.8
No HPV test performed or unknown reason	149,663	2.2
Reason for LBC test	**Number**	**Per cent**
Reflex LBC cytology after detection of oncogenic HPV in primary screening HPV test	472,969	6.9
Cytology after detection of oncogenic HPV in self-collected sample	2,297	0.0
Reflex LBC after detection of oncogenic HPV in Follow-up HPV test	290,157	4.2
Cytology at colposcopy	76,969	1.1
Co-test – test of cure	402,545	5.9
Co-test – investigation of signs or symptoms	564,690	8.2
Co-test – other, as recommended in guidelines	137,560	2.0
Other	218,591	3.2
Conventional Pap test to screen for cervical cancer precursors	2,726	0.0
No LBC test performed or unknown reason	4,677,992	68.3

Note: Based on participants who had an HPV or LBC test for any reason between 1 January 2018 and 31 December 2022. All tests in the period are included, not just the first test. As many participants have an HPV test and an LBC test, the number of HPV tests and the number of LBC tests combined exceeds the total number of tests. Excludes current Compass participants.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A1.14: Number of screening HPV tests, per month, participants aged 25–74, 2018, 2019, 2020, 2021, and 2022

	Year				
Month	**2018**	**2019**	**2020**	**2021**	**2022**
January	132,402	125,161	94,313	51,111	42,906
February	145,919	164,224	101,875	59,610	58,823
March	144,984	167,868	74,161	63,248	57,207
April	124,979	129,689	37,477	50,436	39,176
May	164,629	153,803	56,332	53,196	47,527
June	139,769	125,689	70,343	56,083	44,831
July	142,341	145,196	68,292	54,747	42,767
August	145,616	141,583	58,564	50,786	50,323
September	119,332	129,740	64,177	50,148	46,033
October	141,203	143,717	65,603	48,906	53,593
November	138,539	132,953	64,161	52,896	62,686
December	100,555	93,618	51,992	42,590	57,730

Note*:* Data are number of screening HPV tests (reason for test of primary screening or follow-up HPV test) performed each month in 2018, 2019, 2020, 2021, and 2022 for participants aged 25–74. Excludes current Compass participants.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A1.15: Number of HPV and LBC tests, per month, participants aged 25–74, 2018, 2019, 2020, 2021, and 2022

	Year				
Month	**2018**	**2019**	**2020**	**2021**	**2022**
January	153,534	147,256	117,621	74,586	61,838
February	170,421	191,483	129,664	88,655	86,332
March	169,485	196,356	97,274	94,760	86,018
April	146,049	152,851	53,632	74,807	60,172
May	191,994	182,014	79,584	79,613	74,824
June	162,755	149,457	98,097	82,395	70,584
July	165,107	172,092	96,272	79,948	66,798
August	170,381	168,061	84,468	76,133	78,784
September	140,398	154,086	92,868	75,583	71,694
October	166,904	171,408	95,094	74,197	79,347
November	163,932	160,303	93,405	80,703	90,804
December	119,697	114,444	76,694	63,458	79,322

Note*:* Data are number of HPV and LBC tests for any reason performed each month in 2018, 2019, 2020, 2021, and 2022 for participants aged 25–74. Excludes current Compass participants.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A1.16: Number of self-collected screening HPV tests per month, participants aged 25–74, 2018, 2019, 2020, 2021, and 2022

	Year				
Month	**2018**	**2019**	**2020**	**2021**	**2022**
January	48	186	236	244	370
February	77	263	316	300	532
March	103	314	239	369	586
April	113	283	142	302	419
May	128	332	157	360	496
June	116	275	237	384	618
July	118	304	212	407	3,334
August	158	301	188	381	4,943
September	126	297	252	479	5,381
October	165	329	308	364	6,491
November	176	353	271	576	8,356
December	149	262	293	420	7,913

Note*:* Data are number of screening HPV tests (reason for test of primary screening or follow-up HPV test) that were self-collected each month in 2018, 2019, 2020, 2021, and 2022, for participants aged 25–74. Excludes current Compass participants.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

A2 Response to invitation

Table A2.1: Response to invitation, by age, 2022

		Response within 6 months	
Age group	**Invitations**	**Number**	**Crude rate (%)**
25–29	228,342	31,539	13.8
30–34	193,372	24,796	12.8
35–39	127,257	26,600	20.9
40–44	153,083	28,373	18.5
45–49	164,284	27,345	16.6
50–54	175,110	27,560	15.7
55–59	168,048	26,323	15.7
60–64	170,700	27,648	16.2
65–69	149,108	23,963	16.1
70–74	53,775	13,319	24.8
25–74	**1,583,079**	**257,466**	**16.3**

Note*:* Invitations refer to the number of invitees sent an invitation to screen or rescreen; number refers to the number of invitees who had an HPV test within 6 months.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A2.2: Response to invitation, by letter type, invitees aged 25–74, 2022

		Response within 6 months	
Letter type	**Invitations**	**Number**	**Crude rate (%)**
A1	229,275	29,796	13.0
B1	231,845	14,618	6.3
C1	591,372	194,984	33.0
D1	530,587	18,068	3.4
Total	**1,583,079**	**257,466**	**16.3**

Note*:* A1 = invitation to screen; B1 = invitation to screen eligible to self-collect; C1 = invitation to rescreen; D1 = invitation to rescreen eligible to self-collect. Invitations refer to the number of invitees sent an invitation to screen or rescreen; number refers to the number of invitees who had an HPV test within 6 months.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A2.3: Response to invitation to screen or rescreen, by state and territory, invitees aged 25–74, 2022

		Response within 6 months	
State and territory	**Invitations**	**Number**	**Crude rate (%)**
NSW	558,051	77,628	13.9
Vic	390,484	68,074	17.4
Qld	291,498	50,590	17.4
WA	145,668	27,514	18.9
SA	102,217	18,717	18.3
Tas	31,507	6,591	20.9
ACT	37,078	4,991	13.5
NT	18,188	2,147	11.8
Australia	**1,583,079**	**257,466**	**16.3**

Note Invitations refer to the number of invitees sent an invitation to screen or rescreen; number refers to the number of invitees who had an HPV test within 6 months.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A2.4: Response to invitation, by year, invitees aged 25–74, 2018 to 2022

		Response within 6 months	
Year	**Invitations**	**Number**	**Crude rate (%)**
2018	8,121	2,120	26.1
2019	283,374	41,388	14.6
2020	182,107	19,852	10.9
2021	1,872,068	155,079	8.3
2022	1,583,079	257,466	16.3

Note: Invitations refer to the number of invitees sent an invitation to screen or rescreen; number refers to the number of invitees who had an HPV test within 6 months.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

A4 Screening results

Table A4.1: Risk of a significant cervical abnormality, primary screening tests, by age, 2022

	Risk of a significant cervical abnormality					
	Low risk		Intermediate risk		Higher risk	
Age group	Number	Crude rate (%)	Number	Crude rate (%)	Number	Crude rate (%)
<25	3,249	70.9	1,172	25.6	75	1.6
25–29	86,996	81.2	17,178	16.0	1,979	1.8
30–34	57,364	87.8	5,858	9.0	1,616	2.5
35–39	56,478	90.8	3,684	5.9	1,596	2.6
40–44	46,157	91.9	2,480	4.9	1,289	2.6
45–49	41,186	92.8	1,880	4.2	1,079	2.4
50–54	37,415	93.0	1,617	4.0	888	2.2
55–59	32,236	93.0	1,332	3.8	838	2.4
60–64	30,177	93.5	1,051	3.3	754	2.3
65–69	24,580	93.9	798	3.0	557	2.1
70–74	18,744	94.3	512	2.6	441	2.2
75+	2,232	93.0	65	2.7	73	3.0
25–74	**431,333**	**89.4**	**36,390**	**7.5**	**11,037**	**2.3**

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A4.2: Risk of a significant cervical abnormality, primary screening tests, by state and territory, participants aged 25–74, 2022

	Risk of a significant cervical abnormality					
	Low risk		Intermediate risk		Higher risk	
State and territory	Number	Crude rate (%)	Number	Crude rate (%)	Number	Crude rate (%)
NSW	131,974	89.9	10,762	7.3	3,189	2.2
Vic	124,744	89.3	10,582	7.6	3,286	2.4
Qld	81,760	88.8	7,202	7.8	2,360	2.6
WA	43,410	89.2	3,830	7.9	1,013	2.1
SA	27,160	89.9	2,179	7.2	668	2.2
Tas	8,870	89.3	763	7.7	221	2.2
ACT	8,492	91.4	604	6.5	138	1.5
NT	4,767	85.0	445	7.9	151	2.7
Australia	**431,333**	**89.4**	**36,390**	**7.5**	**11,037**	**2.3**

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A4.3: Risk of a significant cervical abnormality, primary screening tests, by year, participants aged 25–74, 2018 to 2022

	Risk of a significant cervical abnormality					
	Low risk		Intermediate risk		Higher risk	
Year	Number	Crude rate (%)	Number	Crude rate (%)	Number	Crude rate (%)
2018	1,445,351	91.0	98,637	6.2	39,595	2.5
2019	1,411,594	91.4	93,279	6.0	35,633	2.3
2020	596,505	89.4	50,715	7.6	18,402	2.8
2021	448,920	88.8	40,998	8.1	14,009	2.8
2022	431,333	89.4	36,390	7.5	11,037	2.3

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

A5 Correlation

Table A5.1: Proportion of high-grade or glandular LBC tests followed by high-grade cervical abnormality or cervical cancer histology within 6 months, participants aged 25–74, 2018 to 2021

Year	Number of high-grade LBC results	Number followed by high-grade cervical histology within 6 months	Proportion (%)
2018	8,969	5,993	66.8
2019	7,704	5,189	67.4
2020	4,600	3,211	69.8
2021	3,762	2,761	73.4

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

A6 Screening HPV test positivity

Table A6.1: Screening HPV test positivity, by age and birth cohort, 2022

	Screening HPV test positivity					
	Oncogenic HPV 16/18 detected		Oncogenic HPV (not 16/18) detected		Oncogenic HPV (any type) detected	
Age group	Number	Positivity (%)	Number	Positivity (%)	Number	Positivity (%)
Age 25–74						
<25	45	1.0	1,268	27.8	1,313	28.7
25–29	1,201	1.1	18,622	17.4	19,823	18.6
30–34	1,209	1.9	6,545	10.0	7,754	11.9
35–39	1,274	2.1	4,197	6.8	5,471	8.8
40–44	1,091	2.2	2,821	5.6	3,912	7.8
45–49	973	2.2	2,091	4.7	3,064	6.9
50–54	823	2.1	1,827	4.6	2,650	6.6
55–59	798	2.3	1,505	4.4	2,303	6.7
60–64	694	2.2	1,253	3.9	1,947	6.1
65–69	510	2.0	969	3.7	1,479	5.7
70–74	409	2.1	639	3.2	1,048	5.3
75+	69	2.9	83	3.5	152	6.4
25–74	**8,982**	**1.9**	**40,469**	**8.4**	**49,451**	**10.3**
Age indicates were offered HPV vaccination[(a)]						
<25	45	1.0	1,268	27.8	1,313	28.7
25–29	1,201	1.1	18,622	17.4	19,823	18.6
30–34	1,209	1.9	6,545	10.0	7,754	11.9
35–39	1,274	2.1	4,197	6.8	5,471	8.8
40–44	417	1.9	1,274	5.9	1,691	7.8
Total	**4,146**	**1.6**	**31,906**	**12.3**	**36,052**	**13.9**
Age indicates were not offered HPV vaccination[(b)]						
40–44	674	2.4	1,547	5.5	2,221	7.8
45–49	973	2.2	2,091	4.7	3,064	6.9
50–54	823	2.1	1,827	4.6	2,650	6.6
55–59	798	2.3	1,505	4.4	2,303	6.7
60–64	694	2.2	1,253	3.9	1,947	6.1
65–69	510	2.0	969	3.7	1,479	5.7
70–74	409	2.1	639	3.2	1,048	5.3
75+	69	2.9	83	3.5	152	6.4
Total	**4,950**	**2.2**	**9,914**	**4.4**	**14,864**	**6.5**

(a) Participants born after 30 June 1980 were considered to have been offered HPV vaccination as these participants were eligible for the school or catch-up program during 2007.

(b) Participants born on or before 30 June 1980 were considered to have not been offered HPV vaccination, as these participants were outside the eligible age for HPV vaccination.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023)

Table A6.2: Screening HPV test positivity, by state and territory and birth cohort, 2022

State and territory	Screening HPV test positivity					
	Oncogenic HPV 16/18 detected		Oncogenic HPV (not 16/18) detected		Oncogenic HPV (any type) detected	
	Number	Positivity (%)	Number	Positivity (%)	Number	Positivity (%)
Age 25–74						
NSW	2,567	1.8	11,834	8.1	14,401	9.8
Vic	2,824	2.0	11,593	8.3	14,417	10.4
Qld	1,889	2.1	8,169	8.9	10,058	11.0
WA	774	1.6	4,312	8.9	5,086	10.5
SA	539	1.8	2,396	8.0	2,935	9.8
Tas	153	1.5	865	8.7	1,018	10.3
ACT	108	1.2	669	7.2	777	8.4
NT	121	2.2	598	10.9	719	13.1
Australia	**8,982**	**1.9**	**40,469**	**8.4**	**49,451**	**10.3**
Age indicates were offered HPV vaccination[(a)]						
NSW	1,239	1.6	9,152	11.9	10,391	13.5
Vic	1,225	1.6	9,158	12.0	10,383	13.6
Qld	834	1.7	6,414	13.2	7,248	14.9
WA	411	1.5	3,576	13.0	3,987	14.5
SA	243	1.5	1,925	11.7	2,168	13.2
Tas	70	1.4	621	12.1	691	13.4
ACT	56	1.0	533	9.7	589	10.7
NT	61	1.8	499	14.7	560	16.5
Australia	**4,146**	**1.6**	**31,906**	**12.3**	**36,052**	**13.9**
Age indicates were not offered HPV vaccination[(b)]						
NSW	1,361	1.9	3,003	4.2	4,364	6.1
Vic	1,632	2.5	2,830	4.4	4,462	6.9
Qld	1,082	2.4	2,080	4.7	3,162	7.1
WA	375	1.7	901	4.1	1,276	5.8
SA	302	2.1	567	4.0	869	6.2
Tas	84	1.7	249	5.2	333	6.9
ACT	53	1.4	146	3.8	199	5.2
NT	60	2.7	132	6.0	192	8.8
Australia	**4,950**	**2.2**	**9,914**	**4.4**	**14,864**	**6.5**

(a) Participants born after 30 June 1980 were considered to have been offered HPV vaccination as these participants were eligible for the school or catch-up program during 2007.

(b) Participants born on or before 30 June 1980 were considered to have not been offered HPV vaccination, as these participants were outside the eligible age for HPV vaccination.

Note*:* Direct comparisons between the states and territories of Australia are not advised, due to the substantial differences that exist between the jurisdictions, including population, area, geographical structure, policies, and other factors.

Source*:* AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A6.3: Screening HPV test positivity, by year and birth cohort, 2018 to 2022

	Screening HPV test positivity					
	Oncogenic HPV 16/18 detected		Oncogenic HPV (not 16/18) detected		Oncogenic HPV (any type) detected	
Year	Number	Positivity (%)	Number	Positivity (%)	Number	Positivity (%)
Age 25–74						
2018	33,279	2.1	106,039	6.7	139,318	8.8
2019	30,180	2.0	100,026	6.5	130,206	8.4
2020	15,163	2.3	54,545	8.2	69,708	10.5
2021	11,416	2.3	44,329	8.8	55,745	11.0
2022	8,982	1.9	40,469	8.4	49,451	10.3
Age indicates were offered HPV vaccination[(a)]						
2018	12,490	2.3	69,380	12.7	81,870	15.0
2019	11,155	2.0	64,557	11.7	75,712	13.7
2020	7,002	2.1	40,971	12.5	47,973	14.7
2021	5,478	2.0	34,881	12.7	40,359	14.7
2022	4,146	1.6	31,906	12.3	36,052	13.9
Age indicates were not offered HPV vaccination[(b)]						
2018	21,242	2.0	44,205	4.1	65,447	6.1
2019	19,338	1.9	39,715	3.9	59,053	5.8
2020	8,371	2.4	15,853	4.5	24,224	6.9
2021	6,074	2.6	11,072	4.7	17,146	7.2
2022	4,950	2.2	9,914	4.4	14,864	6.5

(a) Participants born after 30 June 1980 were considered to have been offered HPV vaccination as these participants were eligible for the school or catch-up program during 2007.

(b) Participants born on or before 30 June 1980 were considered to have not been offered HPV vaccination, as these participants were outside the eligible age for HPV vaccination.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

A8 LBC test in self-collection participants positive for oncogenic HPV (not 16/18)

Table A8.1: Proportion of participants who self-collected a sample for their primary screening HPV test that detected oncogenic HPV (not 16/18) who had an LBC test within 3 months and within 6 months, by age, 2022

	Within 3 months		Within 6 months	
Age group	**Number**	**Crude rate (%)**	**Number**	**Crude rate (%)**
25–29	858	70.5	982	80.7
30–34	316	66.8	358	75.7
35–39	211	66.4	248	78.0
40–44	140	59.3	168	71.2
45–49	134	64.4	161	77.4
50–54	114	54.5	139	66.5
55–59	150	67.6	172	77.5
60–64	160	70.5	186	81.9
65–69	123	68.7	140	78.2
70–74	50	48.5	71	68.9
25–74	**2,256**	**66.5**	**2,625**	**77.4**

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A8.2: Proportion of participants who self-collected a sample for their primary screening HPV test that detected oncogenic HPV (not 16/18) who had an LBC test within 3 months and within 6 months, by month, participants aged 25–74, 2022

	Within 3 months		Within 6 months	
Month	**Number**	**Crude rate (%)**	**Number**	**Crude rate (%)**
January	15	39.5	23	60.5
February	13	39.4	19	57.6
March	14	41.2	17	50.0
April	17	47.2	20	55.6
May	13	39.4	19	57.6
June	33	60.0	35	63.6
July	233	68.1	265	77.5
August	310	66.5	359	77.0
September	321	68.4	371	79.1
October	382	65.1	465	79.2
November	493	69.5	559	78.8
December	412	69.8	473	80.2

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A8.3: Proportion of participants who self-collected a sample for their primary screening HPV test that detected oncogenic HPV (not 16/18) who had an LBC test within 3 months and within 6 months, participants aged 25–74, 2018 to 2022

	Within 3 months		Within 6 months	
Year	Number	Crude rate (%)	Number	Crude rate (%)
2018	62	51.7	80	66.7
2019	122	46.2	157	59.5
2020	105	52.0	121	59.9
2021	168	48.0	204	58.3
2022	2,256	66.5	2,625	77.4

Source*:* AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

A9 Colposcopy in self-collection participants positive for oncogenic HPV 16/18

Table A9.1: Proportion of participants who self-collected a sample for their primary screening HPV test that detected oncogenic HPV 16/18 who had a colposcopy within 3 months and within 6 months, by age, 2022

	Within 3 months		Within 6 months	
Age group	**Number**	**Crude rate (%)**	**Number**	**Crude rate (%)**
25–29	28	43.8	42	65.6
30–34	41	48.2	56	65.9
35–39	51	50.0	76	74.5
40–44	47	51.1	72	78.3
45–49	65	59.1	86	78.2
50–54	72	61.5	94	80.3
55–59	69	62.2	84	75.7
60–64	68	63.0	89	82.4
65–69	60	57.7	79	76.0
70–74	42	65.6	56	87.5
25–74	**543**	**56.7**	**734**	**76.7**

Note*:* Number who had a colposcopy within 6 months for 2022 data may be an underestimate.

Source*:* AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A9.2: Proportion of participants who self-collected a sample for their primary screening HPV test that detected oncogenic HPV 16/18 who had a colposcopy within 3 months and within 6 months, by month, participants aged 25–74, 2022

	Within 3 months		Within 6 months	
Month	**Number**	**Crude rate (%)**	**Number**	**Crude rate (%)**
January	n.p.	n.p.	n.p.	n.p.
February	7	63.6	9	81.8
March	16	84.2	17	89.5
April	n.p.	n.p.	n.p.	n.p.
May	n.p.	n.p.	7	87.5
June	10	50.0	15	75.0
July	55	56.1	79	80.6
August	83	60.1	105	76.1
September	58	52.3	78	70.3
October	77	47.2	121	74.2
November	107	53.2	151	75.1
December	121	68.4	143	80.8

Note*:* Number who had a colposcopy within 6 months for 2022 data may be an underestimate.

Source*:* AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A9.3: Proportion of participants who self-collected a sample for their primary screening HPV test that detected oncogenic HPV 16/18 who had a colposcopy within 3 months and within 6 months, participants aged 25–74, 2018 to 2022

	Within 3 months		Within 6 months	
Year	Number	Crude rate (%)	Number	Crude rate (%)
2018	24	48.0	35	70.0
2019	48	46.2	66	63.5
2020	51	51.0	77	77.0
2021	66	50.4	89	67.9
2022	543	56.7	734	76.7

Source*:* AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

A10 Adherence to recommendation for follow-up

Table A10.1: Time to follow-up HPV test after intermediate risk screening episode, participants aged 25–74, 2021

Time to follow-up HPV test (months)	Number who had follow-up HPV test	Cumulative number who had follow-up HPV test	Per cent of intermediate risk participants who had follow-up HPV test (%)	Cumulative per cent of intermediate risk participants who had follow-up HPV test (%)
1	22	22	0.1	0.1
2	32	54	0.1	0.1
3	26	80	0.1	0.2
4	51	131	0.1	0.3
5	44	175	0.1	0.5
6	80	255	0.2	0.7
7	107	362	0.3	0.9
8	120	482	0.3	1.2
9	199	681	0.5	1.7
10	1,198	1,879	3.1	4.8
11	2,691	4,570	6.9	11.6
12	4,054	8,624	10.3	21.9
13	6,487	15,111	16.5	38.4
14	3,390	18,501	8.6	47.1
15	2,149	20,650	5.5	52.5
16	1,768	22,418	4.5	57.0
17	2,388	24,806	6.1	63.1
18	1,422	26,228	3.6	66.7
19	811	27,039	2.1	68.8
20	850	27,889	2.2	71.0
21	1,873	29,762	4.8	75.7
No follow-up HPV test	9,547	39,309	24.3	100.0

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A10.2: Adherence to recommendation for follow-up after intermediate risk screening episode, by age, 2021

Age group	Number who had follow-up HPV test 9–15 months after screening episode	Adherence to recommendation for follow-up (%)
25–29	9,454	52.0
30–34	3,489	48.4
35–39	1,999	47.6
40–44	1,339	47.9
45–49	1,084	49.1
50–54	859	50.7
55–59	633	50.5
60–64	575	57.3
65–69	442	63.2
70–74	50	64.1
25–74	**19,924**	**50.7**

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A10.3: Adherence to recommendation for follow-up after intermediate risk screening episode by state and territory, participants aged 25–74, 2021

State and territory	Number who had follow-up HPV test 9–15 months after screening episode	Adherence to recommendation for follow-up (%)
NSW	5,724	49.5
Vic	5,999	52.4
Qld	3,849	49.2
WA	2,062	50.2
SA	1,197	52.2
Tas	481	56.5
ACT	396	57.6
NT	212	41.2
Australia	**19,924**	**50.7**

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A10.4: Time to follow-up HPV test after intermediate risk follow-up episode, participants aged 25–74, 2021

Time to follow-up HPV test (months)	Number who had follow-up HPV test	Cumulative number who had follow-up HPV test	Per cent of intermediate risk participants who had follow-up HPV test (%)	Cumulative per cent of intermediate risk participants who had follow-up HPV test (%)
1	10	10	0.1	0.1
2	14	24	0.1	0.2
3	22	46	0.2	0.4
4	21	67	0.2	0.5
5	23	90	0.2	0.7
6	41	131	0.3	1.1
7	45	176	0.4	1.4
8	54	230	0.4	1.9
9	101	331	0.8	2.7
10	360	691	2.9	5.6
11	795	1,486	6.5	12.1
12	1,451	2,937	11.8	23.9
13	2,272	5,209	18.5	42.4
14	1,264	6,473	10.3	52.6
15	818	7,291	6.7	59.3
16	670	7,961	5.5	64.7
17	751	8,712	6.1	70.8
18	482	9,194	3.9	74.8
19	279	9,473	2.3	77.0
20	266	9,739	2.2	79.2
21	596	10,335	4.9	84.0
No follow-up HPV test	1,964	12,299	16.0	100.0

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A10.5: Adherence to recommendation for follow-up after intermediate risk follow-up episode, by age, 2021

Age group	Number who had follow-up HPV test 9–15 months after follow-up episode	Adherence to recommendation for follow-up (%)
25–29	3,289	58.5
30–34	1,506	53.4
35–39	909	55.4
40–44	569	53.3
45–49	509	58.3
50–54	59	62.1
55–59	46	47.9
60–64	25	58.1
65–69	29	70.7
70–74	2	66.7
25–74	**6,943**	**56.5**

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A10.6: Adherence to recommendation for follow-up after intermediate risk follow-up episode by state and territory, participants aged 25–74, 2021

State and territory	Number who had follow-up HPV test 9–15 months after follow-up episode	Adherence to recommendation for follow-up (%)
NSW	1,900	55.4
Vic	1,845	57.2
Qld	1,535	55.6
WA	795	56.3
SA	438	59.9
Tas	203	61.5
ACT	159	60.5
NT	68	47.9
Australia	**6,943**	**56.5**

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

A11 Follow up results

Table A11.1: Risk of a significant cervical abnormality, first follow-up episodes, by age, 2022

	Risk of a significant cervical abnormality					
	Low risk		Intermediate risk		Higher risk	
Age group	Number	Crude rate (%)	Number	Crude rate (%)	Number	Crude rate (%)
<25	205	40.0	287	56.1	18	3.5
25–29	3,888	37.1	6,096	58.2	398	3.8
30–34	2,071	40.7	2,678	52.7	280	5.5
35–39	1,191	40.5	1,561	53.1	169	5.7
40–44	823	43.0	946	49.5	132	6.9
45–49	663	43.8	775	51.2	67	4.4
50–54	514	41.0	651	52.0	72	5.7
55–59	318	33.4	571	60.0	43	4.5
60–64	285	35.4	445	55.3	49	6.1
65–69	181	30.9	358	61.1	27	4.6
70–74	39	27.3	89	62.2	8	5.6
74+	n.p.	22.2	7	77.8	0	0.0
25–74	**9,973**	**38.9**	**14,170**	**55.2**	**1,245**	**4.9**

Note: Risk of significant cervical abnormality is based on HPV test and LBC test results only. There will be some participants with an intermediate risk first follow-up episode result that will be managed as higher risk due to their age, screening history, or Indigenous status.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A11.2: Risk of a significant cervical abnormality, first follow-up episodes, by state and territory, participants aged 25–74, 2022

	Risk of a significant cervical abnormality					
	Low risk		Intermediate risk		Higher risk	
State and territory	Number	Crude rate (%)	Number	Crude rate (%)	Number	Crude rate (%)
NSW	2,717	37.2	4,129	56.5	401	5.5
Vic	3,204	41.1	4,194	53.8	313	4.0
Qld	1,836	37.9	2,693	55.6	247	5.1
WA	1,068	38.9	1,494	54.5	152	5.5
SA	539	36.2	877	58.9	62	4.2
Tas	263	40.2	340	52.0	43	6.6
ACT	215	41.2	293	56.1	13	2.5
NT	130	42.9	149	49.2	14	4.6
Australia	**9,973**	**38.9**	**14,170**	**55.2**	**1,245**	**4.9**

Note: Risk of significant cervical abnormality is based on HPV test and LBC test results only. There will be some participants with an intermediate risk first follow-up episode result that will be managed as higher risk due to their age, screening history, or Indigenous status.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A11.3: Risk of a significant cervical abnormality, second follow-up episodes, by age, 2022

	Risk of a significant cervical abnormality			
	Low risk		Higher risk	
Age group	Number	Crude rate (%)	Number	Crude rate (%)
<25	323	33.2	651	66.8
25–29	1,833	31.0	4,065	68.8
30–34	1,534	33.2	3,085	66.7
35–39	859	32.3	1,798	67.6
40–44	605	31.8	1,296	68.1
45–49	448	30.6	1,013	69.3
50–54	285	32.2	601	67.8
55–59	168	25.2	498	74.7
60–64	137	20.0	545	79.4
65–69	94	15.9	498	84.1
70–74	27	20.1	107	79.9
74+	6	24.0	19	76.0
25–74	**5,990**	**30.7**	**13,506**	**69.2**

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A11.4: Risk of a significant cervical abnormality, second follow-up episodes, by state and territory, participants aged 25–74, 2022

	Risk of a significant cervical abnormality			
	Low risk		Higher risk	
State and territory	Number	Crude rate (%)	Number	Crude rate (%)
NSW	1,734	27.6	4,544	72.3
Vic	1,772	33.2	3,548	66.6
Qld	1,048	36.6	1,814	63.3
WA	750	27.9	1,932	72.0
SA	305	23.6	985	76.3
Tas	167	37.6	276	62.2
ACT	146	33.3	292	66.5
NT	67	36.8	115	63.2
Australia	**5,990**	**30.7**	**13,506**	**69.2**

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

A12 Colposcopy rate

Table A12.1: Colposcopy rate, by screening or follow-up result, by age, 2021

	Screening or follow-up result				
Age group	Screening HPV 16/18	Screening HPV (not 16/18) + high-grade/ glandular LBC	First follow-up HPV 16/18 + any LBC or HPV (not 16/18) + high-grade/ glandular LBC	Second follow-up any HPV	Total
Number of colposcopies					
25–29	994	710	389	276	2,369
30–34	1,224	465	311	250	2,250
35–39	1,033	296	183	176	1,688
40–44	997	177	139	131	1,444
45–49	791	113	102	89	1,095
50–54	649	65	78	121	913
55–59	538	64	74	121	797
60–64	475	49	45	141	710
65–69	351	26	30	108	515
70–74	296	24	8	36	364
25–74	**7,348**	**1,989**	**1,359**	**1,449**	**12,145**
Colposcopy rate (%)					
25–29	61.4	76.5	75.5	33.3	60.9
30–34	64.7	77.9	74.9	34.9	62.2
35–39	65.3	77.1	75.3	39.4	63.6
40–44	67.0	76.0	69.5	40.1	64.2
45–49	65.8	74.8	73.4	32.8	62.1
50–54	62.2	76.5	79.6	49.8	62.2
55–59	65.2	77.1	71.2	52.6	64.2
60–64	64.0	83.1	71.4	54.9	63.3
65–69	63.7	78.8	66.7	50.2	61.0
70–74	67.4	77.4	80.0	56.3	66.9
25–74	**64.6**	**77.0**	**74.2**	**40.3**	**62.6**

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A12.2: Colposcopy rate, by screening or follow-up result, by state and territory, participants aged 25–74, 2021

State and territory	Screening or follow-up result				
	Screening HPV 16/18	Screening HPV (not 16/18) + high-grade/ glandular LBC	First follow-up HPV 16/18 + any LBC or HPV (not 16/18) + high-grade/ glandular LBC	Second follow-up any HPV	Total
Number of colposcopies					
NSW	2,182	594	413	688	3,877
Vic	2,502	460	358	303	3,623
Qld	1,408	508	283	125	2,324
WA	615	213	149	171	1,148
SA	348	123	100	94	665
Tas	118	44	19	12	193
ACT	96	16	23	53	188
NT	79	28	14	3	124
Australia	**7,348**	**1,989**	**1,359**	**1,449**	**12,145**
Colposcopy rate (%)					
NSW	69.2	78.1	78.4	42.8	64.1
Vic	65.7	72.6	74.3	37.2	63.2
Qld	60.4	81.9	70.2	35.6	62.7
WA	63.5	73.4	72.0	36.1	59.2
SA	53.5	77.4	75.8	43.9	57.5
Tas	61.1	83.0	73.1	44.4	64.5
ACT	72.7	72.7	74.2	51.0	65.1
NT	56.0	70.0	58.3	33.3	57.9
Australia	**64.6**	**77.0**	**74.2**	**40.3**	**62.6**

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

A13 Time to colposcopy

Table A13.1: Proportion of participants who had a colposcopy within 4 weeks, 8 weeks, 12 weeks, and 26 weeks, by screening or follow-up result, participants aged 25–74, 2021

	Screening or follow-up result				
Time to colposcopy (weeks)	Screening HPV 16/18	Screening HPV (not 16/18) + high-grade/ glandular LBC	First follow-up HPV 16/18 + any LBC or HPV (not 16/18) + high-grade/ glandular LBC	Second follow-up any HPV	Total
Number					
4	2,349	662	500	587	4,098
8	5,231	1,562	1,023	1,041	8,857
12	7,004	1,932	1,312	1,372	11,620
26	9,377	2,364	1,640	1,859	15,240
Not performed	*2,006*	*220*	*192*	*1,740*	*4,158*
Per cent					
4	20.6	25.6	27.3	16.3	21.1
8	46.0	60.4	55.8	28.9	45.7
12	61.5	74.8	71.6	38.1	59.9
26	82.4	91.5	89.5	51.7	78.6
Not performed	*17.6*	*8.5*	*10.5*	*48.3*	*21.4*

Note*:* Data shown for time to colposcopy to 26 weeks are cumulative number and per cent; data shown for 'not performed' are not cumulative.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A13.2: Time to colposcopy in median days, by screening or follow-up result, by age, 2021

	Screening or follow-up result				
Age group	Screening HPV 16/18	Screening HPV (not 16/18) + high-grade/ glandular LBC	First follow-up HPV 16/18 + any LBC or HPV (not 16/18) + high-grade/ glandular LBC	Second follow-up any HPV	Total
25–29	58	46	48	108	57
30–34	55	42	44	94	54
35–39	55	43	51	85	54
40–44	57	42	49	84	56
45–49	56	40	48	114	56
50–54	62	40	55	70	60
55–59	60	42	56	64	57
60–64	62	40	56	63	61
65–69	63	50	56	72	64
70–74	55	42	23	79	54
25–74	**57**	**43**	**49**	**85**	**56**

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A13.3: Time to colposcopy in median days, by screening or follow-up result, by state and territory, participants aged 25–74, 2021

State and territory	Screening or follow-up result				
	Screening HPV 16/18	Screening HPV (not 16/18) + high-grade/ glandular LBC	First follow-up HPV 16/18 + any LBC or HPV (not 16/18) + high-grade/ glandular LBC	Second follow-up any HPV	Total
NSW	49	42	42	77	50
Vic	56	46	52	91	57
Qld	68	41	49	106	59
WA	58	45	47	92	58
SA	71	48	47	83	65
Tas	75	52	66	77	69
ACT	50	48	67	80	59
NT	77	47	65	138	72
Australia	**57**	**43**	**49**	**85**	**56**

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

A14 Biopsy rate

Table A14.1: Biopsy rate, by age, 2022

Age group	Number	Biopsy rate (%)
<25	1,938	45.4
25–29	7,133	49.7
30–34	6,605	45.6
35–39	4,874	42.5
40–44	3,752	40.2
45–49	2,835	37.8
50–54	2,193	31.0
55–59	1,739	27.7
60–64	1,436	25.4
65–69	1,027	22.0
70–74	768	20.0
75+	292	17.0
25–74	**32,362**	**38.2**

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A14.2: Biopsy rate, by state and territory, participants aged 25–74, 2022

State and territory	Number	Biopsy rate (%)
NSW	9,448	40.1
Vic	8,333	40.5
Qld	7,750	39.1
WA	3,379	37.5
SA	1,976	28.2
Tas	751	35.5
ACT	391	28.9
NT	284	26.2
Australia	**32,362**	**38.2**

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A14.3: Biopsy rate, by year, participants aged 25–74, 2018 to 2022

Year	Number	Biopsy rate (%)
2018	39,659	43.2
2019	50,522	42.8
2020	50,634	41.3
2021	40,706	39.0
2022	32,362	38.2

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

A15 Yield of high-grade abnormalities on biopsy among participants who attend colposcopy after higher risk screening results

Table A15.1: Yield of high-grade abnormalities on biopsy among participants who attend colposcopy after higher risk screening results, by age, 2021

Age group	Number	Yield (%)
25–29	1,290	40.5
30–34	1,231	39.6
35–39	974	41.6
40–44	677	34.5
45–49	399	25.6
50–54	206	16.3
55–59	162	14.8
60–64	122	12.8
65–69	62	9.0
70–74	36	7.8
25–74	**5,159**	**31.0**

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

A16 Positive predictive value of colposcopy

Table A16.1: Positive predictive value of colposcopy, by age, 2021

Age group	Number	Positive predictive value (%)
25–29	693	69.9
30–34	676	72.3
35–39	555	77.7
40–44	344	75.1
45–49	190	71.2
50–54	83	63.4
55–59	70	76.9
60–64	46	75.4
65–69	14	63.6
70–74	11	55.0
25–74	**2,682**	**72.7**

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

A17a High-grade cervical abnormality detection rate

Table A17.1: High-grade cervical abnormality detection, by age, 2022

Age group	Number participants with high-grade abnormality detected	Number participants screened	Number participants with high-grade abnormality detected per 1,000 participants screened
<20	29	4,860	6.0
20–24	473	28,365	16.7
25–29	3,050	173,054	17.6
30–34	2,933	131,072	22.4
35–39	2,180	118,596	18.4
40–44	1,524	96,737	15.8
45–49	990	84,273	11.7
50–54	587	76,388	7.7
55–59	442	62,121	7.1
60–64	330	54,078	6.1
65–69	215	42,809	5.0
70–74	144	30,933	4.7
75+	52	8,252	6.3
25–74	**12,395**	**870,061**	**14.2**
All ages	**12,949**	**911,538**	**14.2**

Note: Crude rate is the number of participants with a high-grade abnormality detected on histology per 1,000 participants screened.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A17.2: Proportion of participants with high-grade cervical abnormality detected, by histological type, by age, 2022

Age group	CIN NOS	CIN2	CIN3	Endocervical dysplasia	AIS
25–29	4.4	38.9	55.7	n.p.	1.0
30–34	4.9	32.2	59.4	n.p.	3.4
35–39	5.5	26.7	62.8	0.5	4.4
40–44	6.1	28.0	60.4	n.p.	5.2
45–49	7.2	28.7	56.9	n.p.	6.8
50–54	9.2	29.3	58.3	n.p.	2.7
55–59	10.4	27.4	59.3	n.p.	2.7
60–64	13.0	20.6	63.0	n.p.	2.4
65–69	6.0	24.7	66.5	n.p.	n.p.
70–74	8.3	14.6	75.7	n.p.	n.p.
25–74	**5.9**	**31.1**	**59.4**	**0.3**	**3.3**

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A17.3: High-grade cervical abnormality detection, by state and territory, participants aged 25–74, 2022

State and territory	Number participants with high-grade abnormality detected	Number participants screened	Number participants with high-grade abnormality detected per 1,000 participants screened	
			Crude rate	AS rate
NSW	3,714	274,570	13.5	12.5
Vic	2,698	223,057	12.1	11.0
Qld	3,115	179,647	17.3	16.0
WA	1,392	91,010	15.3	13.7
SA	783	56,892	13.8	13.4
Tas	307	18,294	16.8	16.1
ACT	194	16,763	11.6	10.5
NT	146	9,490	15.4	13.7
Australia	**12,395**	**870,061**	**14.2**	**13.1**

Note: Crude rate is the number of participants with a high-grade abnormality detected on histology per 1,000 participants screened. Age-standardised (AS) rate is the number of participants with a high-grade abnormality detected on histology per 1,000 participants screened, age-standardised to the Australian population as at 30 June 2001.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

Table A17.4: High-grade cervical abnormality detection rate, participants aged 25–74, 2018 to 2022

Year	Number participants with high-grade abnormality detected	Number participants screened	Number participants with high-grade abnormality detected per 1,000 participants screened	
			Crude rate	AS rate
2018	15,448	1,881,369	8.2	8.0
2019	18,428	1,912,972	9.6	9.4
2020	17,715	1,073,432	16.5	14.8
2021	15,017	908,605	16.5	15.0
2022	12,395	870,061	14.2	13.1

Note: Crude rate is the number of participants with a high-grade abnormality detected on histology per 1,000 participants screened. Age-standardised (AS) rate is the number of participants with a high-grade abnormality detected on histology per 1,000 participants screened, age-standardised to the Australian population as at 30 June 2001.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

A17b Cervical cancer detection rate

Table A17.5: Cervical cancer detection, by age, 2022

Age group	Number participants with cervical cancer detected	Number participants screened	Number participants with cervical cancer detected per 1,000 participants screened
25–29	26	173,054	0.2
30–34	85	131,072	0.6
35–39	135	118,596	1.1
40–44	121	96,737	1.3
45–49	115	84,273	1.4
50–54	87	76,388	1.1
55–59	77	62,121	1.2
60–64	59	54,078	1.1
65–69	45	42,809	1.1
70–74	30	30,933	1.0
25–74	**780**	**870,061**	**0.9**
All ages	**851**	**911,538**	**0.9**

Note: Crude rate is the number of participants with a cervical cancer detected on histology per 1,000 participants screened.

Source: AIHW analysis of NCSR data (NCSR RDE 4.7 07/07/2023).

A19 Incidence of cervical cancer

Table A19.1: Cervical cancer incidence, by age, 2019

Age group	New cases	Crude rate
25–29	39	4.1
30–34	133	14.0
35–39	142	15.8
40–44	126	15.6
45–49	109	12.8
50–54	69	8.8
55–59	83	10.5
60–64	65	9.1
65–69	53	8.4
70–74	50	9.2
25–74	**869**	**11.0**
All ages	**945**	**7.4**

Note*:* Crude rate is number of new cases of cervical cancer per 100,000 females in the population.

Source*:* AIHW Australian Cancer Database 2019.

Table A19.2: Cervical cancer incidence, by state and territory, women aged 25–74, 2015–2019

State and territory	New cases	Crude rate	AS rate
NSW	1,183	9.7	9.9
Vic	963	9.8	10.0
Qld	967	12.7	13.2
WA	385	9.6	9.8
SA	279	10.3	11.0
Tas	114	13.6	15.0
ACT	56	8.6	8.7
NT	43	11.5	11.7
Australia	**3,990**	**10.4**	**10.7**

Note*:* Crude rate is the number of new cases of cervical cancer per 100,000 females in the population. Age-standardised (AS) rate is the number of new cases of cervical cancer per 100,000 females in the population, age-standardised to the Australian population as at 30 June 2001.

Source*:* AIHW Australian Cancer Database 2019.

Table A19.3: Cervical cancer incidence, by remoteness area, women aged 25–74, 2015–2019

Remoteness area	New cases	Crude rate	AS rate
Major cities	2,714	9.9	10.1
Inner regional	784	11.4	12.2
Outer regional	399	12.4	13.4
Remote	48	10.4	11.0
Very remote	42	15.6	15.9
Australia	**3,990**	**10.4**	**10.7**

Notes

1. Remoteness classification is based on area of usual residence (Statistical Local Area Level 2) at the time of diagnosis.
2. 'Australia' does not match the total because some new cases were not able to be allocated to a remoteness area.
3. Crude rate is the number of new cases of cervical cancer per 100,000 females in the population. Age-standardised (AS) rate is the number of new cases of cervical cancer per 100,000 females in the population, age-standardised to the Australian population as at 30 June 2001.

Source: AIHW Australian Cancer Database 2019.

Table A19.4: Cervical cancer incidence, by socioeconomic area, women aged 25–74, 2015–2019

Socioeconomic area	New cases	Crude rate	AS rate
1 (most disadvantaged)	867	12.2	12.8
2	830	11.0	11.3
3	828	10.6	11.1
4	772	9.7	9.9
5 (least disadvantaged)	686	8.7	8.9
Australia	**3,990**	**10.4**	**10.7**

Notes

1. Socioeconomic area was allocated using the ABS Index of Relative Socio-Economic Disadvantage based on area of usual residence (Statistical Local Area Level 2) at the time of diagnosis.
2. 'Australia' does not match the total because some new cases were not able to be allocated to a socioeconomic area.
3. Crude rate is the number of new cases of cervical cancer per 100,000 females in the population. Age-standardised (AS) rate is the number of new cases of cervical cancer per 100,000 females in the population, age-standardised to the Australian population as at 30 June 2001.

Source: AIHW Australian Cancer Database 2019.

Table A19.5: Incidence of cervical cancer, by year, 1982 to 2019

Year of diagnosis	New cases			Crude rate			AS rate		
	25–74	20–69	All ages	25–74	20–69	All ages	25–74	20–69	All ages
1982	870	829	966	21.0	18.2	12.7	21.2	19.1	14.3
1983	904	845	997	21.4	18.2	12.9	21.6	19.1	14.4
1984	894	843	1,018	20.7	17.8	13.0	20.8	18.6	14.3
1985	945	902	1,065	21.5	18.8	13.5	21.8	19.7	14.7
1986	915	863	1,023	20.4	17.7	12.8	20.8	18.6	14.0
1987	972	909	1,103	21.1	18.2	13.5	21.2	18.7	14.4
1988	939	903	1,069	20.0	17.7	12.9	20.0	18.1	13.6
1989	961	910	1,075	20.0	17.5	12.8	20.2	18.1	13.5
1990	979	929	1,099	20.0	17.5	12.8	20.3	18.2	13.6
1991	967	899	1,097	19.4	16.7	12.7	19.6	17.3	13.3
1992	906	846	1,024	17.9	15.4	11.7	18.0	16.0	12.2
1993	901	846	1,014	17.5	15.3	11.5	17.8	15.8	11.9
1994	995	936	1,143	19.1	16.7	12.8	19.1	17.1	13.1
1995	849	783	969	16.0	13.8	10.7	16.0	14.0	10.9
1996	804	758	938	14.9	13.2	10.2	15.0	13.4	10.4
1997	698	664	816	12.7	11.4	8.8	12.8	11.6	8.8
1998	747	705	877	13.4	12.0	9.4	13.4	12.0	9.3
1999	706	669	809	12.5	11.2	8.5	12.5	11.2	8.5
2000	651	602	773	11.3	10.0	8.1	11.4	10.0	7.9
2001	621	590	742	10.7	9.6	7.6	10.7	9.6	7.5
2002	585	565	697	9.9	9.1	7.1	9.9	9.1	6.9
2003	618	581	731	10.4	9.2	7.4	10.3	9.2	7.1
2004	599	587	729	9.9	9.2	7.3	9.9	9.2	7.0
2005	624	608	741	10.2	9.4	7.3	10.2	9.4	7.0
2006	616	595	726	9.9	9.0	7.1	9.9	9.0	6.8
2007	660	629	758	10.4	9.4	7.2	10.4	9.4	7.0
2008	667	648	792	10.3	9.4	7.4	10.4	9.5	7.2
2009	663	634	767	10.0	9.0	7.0	10.1	9.1	6.8
2010	710	689	823	10.6	9.6	7.4	10.6	9.7	7.2
2011	712	686	800	10.4	9.4	7.1	10.5	9.6	7.0
2012	761	733	869	10.9	9.9	7.6	11.1	10.1	7.4
2013	720	708	818	10.1	9.4	7.0	10.3	9.6	6.9
2014	802	772	895	11.1	10.1	7.6	11.2	10.2	7.4
2015	728	703	823	9.9	9.1	6.9	10.1	9.3	6.7
2016	800	764	891	10.6	9.7	7.3	10.9	9.9	7.1
2017	744	716	840	9.7	8.9	6.8	10.1	9.2	6.6
2018	849	814	930	10.9	10.0	7.4	11.3	10.3	7.3
2019	869	826	945	11.0	10.0	7.4	11.3	10.3	7.2

Note: Crude rate is the number of new cases of cervical cancer per 100,000 females in the population. Age-standardised (AS) rate is the number of new cases of cervical cancer per 100,000 females in the population, age-standardised to the Australian population as at 30 June 2001.

Source: AIHW Australian Cancer Database 2019.

Table A19.6: Five-year relative survival from cervical cancer, by age, 2015–2019

Age group	5-year relative survival (%)
20–24	90.2
25–29	90.9
30–34	91.8
35–39	87.4
40–44	82.2
45–49	78.4
50–54	71.9
55–59	65.4
60–64	70.7
65–69	62.5
70–74	50.1
25–74	**78.7**
All ages	**75.0**

Note: Relative survival was calculated with the period method, using the period 2015–2019 (Brenner and Gefeller 1996).

Source*:* AIHW Australian Cancer Database 2019.

Table A19.7: Trend in 5-year relative survival from cervical cancer in women aged 25–74, 1985–1989 to 2015–2019

Year	5-year relative survival (%)
1985–1989	71.5
1990–1994	75.3
1995–1999	77.5
2000–2004	75.8
2005–2009	76.4
2010–2014	76.6
2015–2019	78.7

Note: Relative survival was calculated with the period method, using the period 2015–2019 (Brenner and Gefeller 1996).

Source*:* AIHW Australian Cancer Database 2019.

Table A19.8: Relative survival at diagnosis and 5-year conditional survival from cervical cancer in women aged 25–74, 2015–2019

	Relative survival	Conditional survival	
Years after diagnosis	Relative survival (%)	Years already survived	5-year conditional relative survival (%)
1	92.3	. .	. .
2	86.1	. .	. .
3	82.4	. .	. .
4	79.9	. .	. .
5	78.7	0	78.7
6	77.7	1	84.2
7	76.6	2	88.9
8	75.8	3	92.0
9	75.2	4	94.0
10	74.4	5	94.6
11	73.9	6	95.1
12	73.6	7	96.1
13	73.4	8	96.7
14	72.9	9	97.0
15	72.8	10	97.7
16	72.4	11	98.0
17	71.9	12	97.8
18	71.7	13	97.8
19	71.2	14	97.6
20	70.8	15	97.4

Note: Relative survival was calculated with the period method, using the period 2015–2019 (Brenner and Gefeller 1996).

Source: AIHW Australian Cancer Database 2019.

A20 Mortality from cervical cancer

Table A20.1: Cervical cancer mortality, by age, 2021

Age group	Deaths	Crude rate
25–29	1	0.1
30–34	7	0.7
35–39	19	2.0
40–44	9	1.1
45–49	16	1.9
50–54	25	3.1
55–59	25	3.2
60–64	24	3.2
65–69	26	3.9
70–74	27	4.6
25–74	**179**	**2.2**
All ages	**229**	**1.8**

Notes

1. Deaths in 2021 were derived by year of registration of death and are based on the preliminary version of cause of death data. Revised and preliminary versions are subject to further revision by the ABS.
2. Crude rate is the number of deaths from cervical cancer per 100,000 females in the population. Crude rates based on fewer than 20 deaths should be interpreted with caution.

Source*:* AIHW National Mortality Database.

Table A20.2: Cervical cancer mortality, by state and territory, women aged 25–74, 2017–2021

State and territory	Deaths	Crude rate	AS rate
NSW	246	2.0	1.9
Vic	180	1.8	1.7
Qld	223	2.8	2.7
WA	85	2.0	1.9
SA	83	3.0	2.9
Tas	19	2.2	n.p.
ACT	13	1.9	n.p.
NT	13	3.4	n.p.
Australia	**862**	**2.2**	**2.1**

Notes

1. Deaths from 2017 to 2020 were derived by year of death; deaths in 2021 were derived by year of registration of death. Deaths registered in 2018 and earlier are based on the final version of cause-of-death data; deaths registered in 2019 are based on revised versions; and deaths registered in 2020 and 2021 are based on preliminary versions. Revised and preliminary versions are subject to further revision by the ABS.
2. Crude rate is the number of deaths from cervical cancer per 100,000 females in the population. Age-standardised (AS) rate is the number of deaths from cervical cancer per 100,000 females in the population, age-standardised to the Australian population as at 30 June 2001. Crude rates based on fewer than 20 deaths should be interpreted with caution; age-standardised rates based on fewer than 20 deaths are not reported.

Source*:* AIHW National Mortality Database.

Table A20.3: Cervical cancer mortality, by remoteness area, women aged 25–74, 2017–2021

Remoteness area	Deaths	Crude rate	AS rate
Major cities	547	1.9	1.9
Inner regional	157	2.2	2.1
Outer regional	100	3.1	3.0
Remote and very remote	26	3.6	3.3
Australia	**862**	**2.2**	**2.1**

Notes

1. Remoteness classification is based on area of usual residence (Statistical Local Area Level 2) at time of death.
2. 'Australia' does not match the total, because some deaths were not able to be allocated to a remoteness area.
3. Deaths from 2017 to 2020 were derived by year of death; deaths in 2021 were derived by year of registration of death. Deaths registered in 2018 and earlier are based on the final version of cause-of-death data; deaths registered in 2019 are based on revised versions; and deaths registered in 2020 and 2021 are based on preliminary versions. Revised and preliminary versions are subject to further revision by the ABS.
4. Crude rate is the number of deaths from cervical cancer per 100,000 females in the population. Age-standardised (AS) rate is the number of deaths from cervical cancer per 100,000 females in the population, age-standardised to the Australian population as at 30 June 2001.

Source: AIHW National Mortality Database.

Table A20.4: Cervical cancer mortality, by socioeconomic area, women aged 25–74, 2017–2021

Socioeconomic area	Deaths	Crude rate	AS rate
1 (most disadvantaged)	271	3.6	3.5
2	170	2.2	2.1
3	143	1.8	1.7
4	141	1.7	1.7
5 (least disadvantaged)	104	1.3	1.2
Australia	**862**	**2.2**	**2.1**

Notes

1. Socioeconomic area was allocated using the ABS Index of Relative Socio-Economic Disadvantage based on area of usual residence (Statistical Local Area Level 2) at time of death.
2. 'Australia' does not match the total, because some deaths were not able to be allocated to a socioeconomic area.
3. Deaths from 2017 to 2020 were derived by year of death; deaths in 2021 were derived by year of registration of death. Deaths registered in 2018 and earlier are based on the final version of cause-of-death data; deaths registered in 2019 are based on revised versions; and deaths registered in 2020 and 2021 are based on preliminary versions. Revised and preliminary versions are subject to further revision by the ABS.
4. Crude rate is the number of deaths from cervical cancer per 100,000 females in the population. Age-standardised (AS) rate is the number of deaths from cervical cancer per 100,000 females in the population, age-standardised to the Australian population as at 30 June 2001.

Source: AIHW National Mortality Database.

Table A20.5: Cervical cancer mortality, by year, 1982 to 2021

Year of death	Deaths			Crude rate			AS rate		
	25–74	20–69	All ages	25–74	20–69	All ages	25–74	20–69	All ages
1982	271	237	346	6.5	5.2	4.6	6.6	5.5	5.2
1983	280	248	343	6.6	5.3	4.5	6.7	5.6	5.0
1984	256	223	339	5.9	4.7	4.3	6.0	5.0	4.9
1985	278	234	363	6.3	4.9	4.6	6.3	5.1	5.1
1986	272	240	341	6.1	4.9	4.3	6.1	5.1	4.6
1987	277	225	348	6.0	4.5	4.3	6.1	4.8	4.6
1988	257	219	345	5.5	4.3	4.2	5.6	4.5	4.5
1989	289	243	369	6.0	4.7	4.4	6.1	4.9	4.7
1990	273	245	339	5.6	4.6	4.0	5.6	4.8	4.2
1991	237	204	331	4.7	3.8	3.8	4.8	4.0	4.0
1992	236	188	322	4.7	3.4	3.7	4.7	3.6	3.8
1993	242	204	318	4.7	3.7	3.6	4.8	3.9	3.7
1994	257	223	341	4.9	4.0	3.8	5.0	4.2	4.0
1995	253	211	334	4.8	3.7	3.7	4.9	3.9	3.8
1996	215	174	301	4.0	3.0	3.3	4.0	3.1	3.3
1997	195	160	285	3.5	2.7	3.1	3.6	2.8	3.0
1998	179	153	260	3.2	2.6	2.8	3.2	2.6	2.7
1999	160	131	227	2.8	2.2	2.4	2.8	2.2	2.3
2000	190	154	265	3.3	2.5	2.8	3.3	2.6	2.6
2001	185	156	271	3.2	2.5	2.8	3.2	2.5	2.6
2002	140	126	217	2.4	2.0	2.2	2.4	2.0	2.1
2003	164	140	239	2.7	2.2	2.4	2.7	2.2	2.2
2004	135	119	210	2.2	1.9	2.1	2.2	1.8	1.9
2005	148	136	221	2.4	2.1	2.2	2.4	2.0	2.0
2006	150	137	228	2.4	2.1	2.2	2.4	2.0	2.0
2007	138	125	201	2.2	1.9	1.9	2.1	1.8	1.7
2008	164	145	237	2.5	2.1	2.2	2.5	2.0	2.0
2009	158	143	242	2.4	2.0	2.2	2.3	1.9	1.9
2010	169	151	230	2.5	2.1	2.1	2.4	2.0	1.9
2011	168	152	228	2.5	2.1	2.0	2.3	2.0	1.8
2012	155	141	225	2.2	1.9	2.0	2.1	1.8	1.7
2013	169	154	229	2.4	2.0	2.0	2.3	2.0	1.8
2014	169	146	217	2.3	1.9	1.8	2.2	1.8	1.6
2015	175	145	233	2.4	1.9	1.9	2.3	1.8	1.8
2016	195	171	258	2.6	2.2	2.1	2.5	2.1	1.9
2017	168	150	243	2.2	1.9	2.0	2.1	1.8	1.7
2018	174	149	228	2.2	1.8	1.8	2.1	1.8	1.6

(continued)

Table A20.5 (continued): Cervical cancer mortality, by year, 1982 to 2021

Year of death	Deaths			Crude rate			AS rate		
	25–74	20–69	All ages	25–74	20–69	All ages	25–74	20–69	All ages
2019	176	155	224	2.2	1.9	1.8	2.2	1.8	1.6
2020	165	146	211	2.0	1.8	1.6	2.0	1.8	1.5
2021	179	152	229	2.2	1.8	1.8	2.0	1.7	1.5

Notes

1. Deaths from 1982 to 2020 were derived by year of death; deaths in 2021 were derived by year of registration of death. Deaths registered in 2018 and earlier are based on the final version of cause of death data; deaths registered in 2019 are based on the revised version; and deaths registered in 2020 and 2021 are based on preliminary versions. Revised and preliminary versions are subject to further revision by the ABS.
2. Crude rate is the number of deaths from cervical cancer per 100,000 females in the population. Age-standardised (AS) rate is number of deaths from cervical cancer per 100,000 females in the population, age-standardised to the Australian population as at 30 June 2001.

Source: AIHW National Mortality Database.

Appendix B: HPV vaccination coverage

While it is a separate program from the NCSP, the National Immunisation Program (NIP) supports the cervical screening program through the provision of free HPV vaccines for young Australians. Through vaccination against HPV, the NIP provides primary prevention of cervical cancer; secondary prevention is provided by cervical screening through the NCSP.

In addition to the shared aim of reducing the incidence of cervical cancer, HPV vaccination has a marked impact on the outcomes of the NCSP, such as the effect of HPV vaccination on high-grade abnormalities. It is therefore relevant to report on HPV vaccination rates in Australia in this publication.

In April 2007, Australia introduced HPV vaccination using the quadrivalent vaccine Gardasil (protecting against HPV types 6, 11, 16, 18), which included an ongoing program for girls aged 12–13 and a 'catch-up' program for girls and women aged 14–26. This program was extended to boys from February 2013.

In 2018, Australia commenced using the new nonavalent HPV vaccine, Gardasil9, replacing the quadrivalent vaccine, Gardasil, thereby protecting against an additional 5 strains of HPV (types 6, 11, 16, 18, 31, 33, 45, 52 and 58). The program began in line with the school year, and reduces the number of doses from 3 to 2 (spaced 6–12 months apart). The introduction of this vaccine will further improve the protection that people vaccinated against HPV have against the development of CIN and cervical cancer. A study suggested that up to 93% of cervical cancers in Australia are associated with the HPV types covered by the new vaccine (Brotherton et al. 2017). In addition, by moving to the nonavalent vaccine, and decreasing the number of recommended doses, the rate of compliance with the vaccination schedule is expected to increase.

Prior to 2019, HPV vaccination data were provided to the National HPV Vaccination Program Register until it was closed on 31 December 2018. Historical HPV vaccination coverage using data from the National HPV Vaccination Program Register are available on the Department of Health and Aged Care website *Historical data from the National HPV Vaccination Program Register* https://www.health.gov.au/resources/collections/historical-data-from-the-national-hpv-vaccination-program-register (Department of Health 2020b).

From 2019, HPV vaccination data have been provided to the Australian Immunisation Register (AIR). HPV vaccination coverage using data from the AIR are available in three recent reports: *Impact evaluation of Australian national human papillomavirus vaccination program* (National Centre for Immunisation Research and Surveillance 2021a), *Annual Immunisation Coverage Report 2021* (National Centre for Immunisation Research and Surveillance 2021b), and *Cervical Cancer Elimination Progress Report: Australia's progress towards the elimination of cervical cancer as a public health problem* (NHMRC Centre of Research Excellence in Cervical Cancer Control 2021).

HPV vaccination coverage data in this publication are sourced from two sources. These are:

- 2012–2017 data published routinely by VCS Foundation (now the Australian Centre for the Prevention of Cervical Cancer (ACPCC)), which operated the National HPV Vaccination Program Register until it was closed on 31 December 2018.
- 2016–2021 data published by the National Centre for Immunisation Research and Surveillance (NCIRS) Australia, using data sourced from the Australian Immunisation Register (AIR) that includes historical HPV vaccination data from the National HPV Vaccination Program Register and ongoing HPV vaccination data.

National HPV vaccination coverage for girls turning 15 years of age is shown for 2012 to 2020 in Table B1.

National HPV vaccination coverage for girls turning 15 years of age has been high and increasing, with a first-dose coverage of 86.6% and a final-dose coverage rate of 80.5% in 2020, before a slight drop to a first-dose coverage of 86.2% and a final-dose coverage rate of 80.3% in 2021.

Table B1: National HPV vaccination coverage for adolescents turning 15 years of age

Year	Coverage First Dose	Coverage Final Dose
2012	82.7	71.5
2013	82.1	71.7
2014	83.7	74.1
2015	86.4	78.0
2016	86.5	78.6
2017	88.9	80.2
2016	82.4	75.0
2017	84.0	76.3
2018	84.7	77.0
2019	85.7	79.8
2020	86.6	80.5
2021	86.2	80.3

Notes

1. Coverage for 2012–2017 historical data is calculated as doses administered and reported to the HPV Register/Estimated Resident Population, expressed as a percentage.
2. Coverage for 2016–2020 ongoing data is calculated as doses administered and reported to the AIR/ number of Medicare-registered girls aged 15 years in the AIR, expressed as a percentage.
3. The difference in denominators and methodology means that the data for 2012–2017 are not directly comparable with data for 2016–2020.
4. The 2019 cohort includes some girls eligible for the 2-dose schedule after the change from the 3-dose schedule in 2018.
5. Year is the year in which adolescents turn 15 years of age; 15 years of age is used as the age for routine review of vaccination coverage that provides the best comparison to allow for varying ages in administration, as per World Health Organization recommendations.

Sources: Department of Health and Aged Care 2020*;* National Centre for Immunisation Research and Surveillance 2021a; National Centre for Immunisation Research and Surveillance 2021b; NHMRC Centre of Research Excellence in Cervical Cancer Control 2021.

Data are not directly comparable between the historical data from the National HPV Vaccination register and the ongoing data due to different data sources and methodology used in the calculation of coverage (see notes for Table B1), with historical estimates lower than from the previous HPV register (Brotherton et al. 2022).

Appendix C: Data sources

The multiple data sources used for this report are summarised in Table C1.

Table C1: Data sources for the National Cervical Screening Program monitoring report 2023

Data used to monitor cervical screening in Australia	Data source
Performance indicator 1 Participation	National Cancer Screening Register; ABS population data
Performance indicator 2 Response to invitation	National Cancer Screening Register
Performance indicator 3 Rescreening	. .
Performance indicator 4 Screening results	National Cancer Screening Register
Performance indicator 5 Correlation of screening results	National Cancer Screening Register
Performance indicator 6 Screening HPV test positivity	National Cancer Screening Register
Performance indicator 7 Cervical cancer diagnosed after a low risk screening test result	. .
Performance indicator 8 LBC test in self-collection participants positive for oncogenic HPV (not 16/18)	National Cancer Screening Register
Performance indicator 9 Colposcopy in self-collection participants positive for oncogenic HPV 16/18	National Cancer Screening Register
Performance indicator 10 Adherence to recommendation for follow-up	National Cancer Screening Register
Performance indicator 11 Follow-up results	National Cancer Screening Register
Performance indicator 12 Colposcopy rate	National Cancer Screening Register
Performance indicator 13 Time to colposcopy	National Cancer Screening Register
Performance indicator 14 Biopsy rate	National Cancer Screening Register
Performance indicator 15 Yield of high-grade abnormalities on biopsy among participants who attend colposcopy with higher risk screening results	National Cancer Screening Register
Performance indicator 16 Positive predictive value of colposcopy	National Cancer Screening Register
Performance indicator 17a High-grade cervical abnormality detection rate	National Cancer Screening Register
Performance indicator 17b Cervical cancer detection rate	National Cancer Screening Register
Performance indicator 18 Cervical cancers diagnosed by time since last screen	. .
Performance indicator 19 Incidence of cervical cancer	AIHW Australian Cancer Database; ABS population data
Performance indicator 20 Mortality from cervical cancer	AIHW National Mortality Database; ABS population data

National Cancer Screening Register

Data for most performance indicators were calculated using National Cancer Screening Register data, according to definitions and data specifications in the *National Cervical Screening Program data dictionary version 1.2* (AIHW 2023d).

The National Cancer Screening Register (NCSR) is the source of NCSP data in Australia, following the migration and consolidation of state and territory cervical screening register data. This change may impact comparisons with previous NCSP reporting, particularly for participants who screen in a different state or territory to which they reside.

The NCSR is intended to be a near-complete record of all cervical tests, including HPV, cytology, colposcopy, and histology. Pathology labs and colposcopists are required under the NCSR Rules 2017 to notify all cervical test data to the NCSR within 14 days. Any test data not notified to the NCSR will not be included in the NCSR or in the data included in this report. Cervical tests for current Compass participants are not included in the NCSR because, as a clinical trial, notification of Compass data is an exemption under the NCSR Rules 2017. This means that any cervical tests conducted as part of the Compass trial are not included in the NCSR, or in the data in this report. This affects Victoria more than other jurisdictions.

The NCSR is a live database, which means that data are continually updated over time. As such, data extracted at varying times differ, with later data likely to have a greater level of completeness.

NCSR data in this report were sourced from the July 2023 raw data extract (RDE) of version 4.7 of the NCSR (NCSR RDE 4.7 07/07/2023).

The Data Quality Statement for National Cancer Screening Program data for 2018–2022 can be found on the AIHW website at https://meteor.aihw.gov.au/content/762065.

AIHW Australian Cancer Database

All forms of cancer, except basal and squamous cell carcinomas of the skin, are notifiable diseases in each Australian state and territory. Legislation in each jurisdiction requires hospitals, pathology laboratories and various other institutions to report all cases of cancer to their central cancer registry. An agreed subset of the data collected by these cancer registries is supplied annually to the AIHW, where it is compiled into the Australian Cancer Database (ACD). The ACD currently contains data on all cases of cancer diagnosed from 1982 to 2019 for all states and territories.

Cancer reporting and registration is a dynamic process, and records in the state and territory cancer registries may be modified if new information is received. Hence, the number of cancer cases reported by the AIHW for any particular year may change slightly over time and may not always align with state and territory reporting for that year.

The Data Quality Statement for the ACD 2019 can be found at https://meteor.aihw.gov.au/content/778315.

AIHW National Mortality Database

The AIHW National Mortality Database (NMD) contains information provided by the registries of births, deaths and marriages and the National Coronial Information System (coded by the ABS), for deaths from 1964 to 2021. The Registry of Births, Deaths and Marriages in each state and territory is responsible for the registration of deaths. These data are then collated and coded by the ABS and maintained at the AIHW in the NMD.

In the NMD, both the year in which death occurred and the year in which it was registered are provided. For the purposes of this report, actual mortality data are based on the year the death occurred, except for the most recent year (2021), for which the number of people whose death was registered is used. Previous investigation has shown that the year of death and its registration coincide for the most part. However, in some instances, deaths at the end of each calendar year may not be registered until the following year. Thus, year-of-death information for the latest available year is generally an underestimate of the actual number of deaths that occurred in that year.

In this report, deaths registered in 2018 and earlier are based on the final version of cause of death data; deaths registered in 2019 are based on the revised version; and deaths registered in 2020 and 2021 are based on the preliminary version. Revised and preliminary versions are subject to further revision by the ABS.

The data quality statements underpinning the AIHW NMD can be found at:

- ABS quality declaration summary for Deaths, Australia https://www.abs.gov.au/methodologies/deaths-australia-methodology/2021
- ABS quality declaration summary for Causes of death, Australia https://www.abs.gov.au/methodologies/causes-death-australia-methodology/2021

For more information on the AIHW NMD and deaths data, see https://www.aihw.gov.au/about-our-data/our-data-collections/national-mortality-database/deaths-data.

Deaths in Aboriginal and Torres Strait Islander peoples

The ABS Death Registrations collection identifies a death as being of an Aboriginal and/or Torres Strait Islander person where the deceased is recorded as Aboriginal, Torres Strait Islander, or both, on the Death Registration Form. Since 2007, the Indigenous status of the deceased has also been derived from the Medical Certificate of Cause of Death for South Australia, Western Australia, Tasmania, the Northern Territory, and the Australian Capital Territory. For New South Wales and Victoria, the Indigenous status of the deceased is derived from the Death Registration Form only. If the Indigenous status reported in this form does not agree with that in the Medical Certificate of Cause of Death, an identification from either source that the deceased was an Aboriginal and/or Torres Strait Islander person is given preference over identifying them as non-Indigenous.

ABS population data

Throughout this report, population data were used to derive rates of participation in cervical screening, cervical cancer incidence and cervical cancer mortality. The population data were sourced from the ABS estimated resident populations.

To derive its estimates of the resident populations, the ABS uses the 5-yearly Census of Population and Housing data, adjusted as follows:

- all respondents in the Census are placed in their state or territory, Statistical Area, and postcode of usual residence; overseas visitors are excluded
- an adjustment is made for persons missed in the Census
- Australians temporarily overseas on Census night are added to the usual residence Census count.

Estimated resident populations are then updated each year from the Census data, using indicators of population change, such as births, deaths, and net migration. More information is available from the ABS website at www.abs.gov.au.

For the Indigenous comparisons in this report, the most recently released Indigenous experimental estimated resident populations, as released by the ABS, were used. Those estimates were based on the 2016 Census of Population and Housing.

Hysterectomy fractions

Hysterectomy fractions represent the proportion of people with an intact uterus (and cervix) at a particular age, and are used to adjust the population for participation calculations. This is because people who have had a hysterectomy with their cervix removed are not at risk of cervical cancer and thus do not require screening. Since a substantial proportion (20%–30%) of middle-aged and older people in Australia do not have an intact cervix, the female population is adjusted to remove these people, so that true participation in cervical screening can be more accurately estimated.

The National Hospital Morbidity Database (NHMD) is based on summary records of patient separations, referring to episodes of care in public and private hospitals; it allows us to view relatively complete hysterectomy numbers and rates for financial years from the mid-1990s. These data were used, with projections forward and backward where required, to generate estimates of current hysterectomy prevalence for females aged 25–74. Published hysterectomy incidence trends, as well as data from the 1995, 2001 and 2004–05 NHS, were drawn on to ensure accuracy in assumptions.

The results of these combined approaches are robust hysterectomy fractions that reflect both historical and current hysterectomy trends, which can be used in the calculation of participation in cervical screening for the most recent participation data.

Table C2: National hysterectomy fractions, females aged 25–74, 2016

Age group (years)	Proportion of females who have not had a hysterectomy
25–29	0.998
30–34	0.991
35–39	0.962
40–44	0.916
45–49	0.859
50–54	0.810
55–59	0.772
60–64	0.736
65–69	0.706
70–74	0.703

Source: AIHW analysis of the National Hospital Morbidity Database.

Appendix D: Classifications

Age

The data in this report are stratified by the age of the person at the time of the specified test or at the time an invitation was sent (for cervical screening data), at the time of diagnosis (for cancer incidence data), or at the time of death (for cancer mortality data).

For NCSR data, the age group 25–74 actually refers to the age group 24.75–74. The age 24 years and 9 months is used instead of 25 years, as people are invited to screen 3 months prior to their 25th birthday, and so are considered to be eligible to screen from that time. The age group 24.75–74 is used to ensure these invitees and participants are included in the data.

State and territory

The state or territory reported is the one where the participant or invitee resides (for cervical screening data), where the diagnosis was made (for cancer incidence data), or the place of usual residence (for cancer mortality data).

For cervical screening data, direct comparisons between the states and territories of Australia are not advised, due to the substantial differences that exist between the jurisdictions, including population, area, geographical structure, policies, and other factors.

Remoteness area

Remoteness areas divide Australia into broad geographical regions that share common characteristics of remoteness for statistical purposes. The remoteness structure divides each state and territory into several regions on the basis of their relative access to services. There are 6 classes of remoteness area: *Major cities*, *Inner regional*, *Outer regional*, *Remote*, *Very remote,* and *Migratory*. The category *Major cities* includes Australia's capital cities, except for Hobart and Darwin, which are classified as *Inner regional*. Remoteness areas are based on the Accessibility and Remoteness Index of Australia, produced by the Australian Population and Migration Research Centre at the University of Adelaide.

For participation calculations, participants were allocated to a remoteness area using their SA2 at the time of their screen (or postcode where SA2 was not available). Caution is required when examining differences across remoteness areas for the following reasons: firstly, postcodes used to allocate participants may not represent their location of usual residence; secondly, as these are based on the 2016 Census, the accuracy of remoteness area classifications diminishes as the years get further away from 2016 due to subsequent changes in demographics; thirdly, some postcodes (and hence individuals) are unable to be allocated to a remoteness area.

Socioeconomic area

The Index of Relative Socio-Economic Disadvantage (one of four Socio-Economic Indexes for Areas developed by the ABS) is based on factors such as average household income, education levels and unemployment rates. It is not a person-based measure but an area-based measure of socioeconomic disadvantage in which small areas of Australia are classified on a continuum from disadvantaged to affluent. This information is used as a proxy

for the socioeconomic disadvantage of participants living in those areas and may not be correct for each person in that area.

In this report, the first socioeconomic area (quintile 1) corresponds to geographical areas containing the 20% of the population with the greatest socioeconomic disadvantage according to the Index of Relative Socio-Economic Disadvantage (that is, the lowest socioeconomic area), and the fifth area (quintile 5) corresponds to the 20% of the population with the least socioeconomic disadvantage (that is, the highest socioeconomic area).

For participation, participants were allocated to a socioeconomic area using their SA2 at the time of their screen (or postcode where SA2 was not available). Caution is required when examining differences across socioeconomic areas for the following reasons: firstly, postcodes used to allocate participants may not represent their location of residence; secondly, as these are based on the 2016 Census, the accuracy of socioeconomic area classifications diminishes as the years get further away from 2016 due to subsequent changes in demographics; thirdly, many postcodes (and hence individuals) are unable to be allocated to a socioeconomic area.

Culturally and linguistically diverse

Participation is not measured for culturally and linguistically diverse (CALD) participants in this report as the data currently do not support these analyses.

There are two fields in the NCSR that relate to the identification of an individual's culturally and linguistically diverse (CALD) status. These are 'Main language other than English spoken at home' and 'Country of birth'.

However, these new fields are not currently sufficiently populated in the NCSR to estimate participation by CALD status. The field 'Main language other than English spoken at home' was not populated for 78% of participants aged 25–74 who had a screening HPV test in 2018–2022, and the 'Country of birth' field was not populated for 69%.

Classification of cervical cancer by histology

Histology codes to classify cervical cancer into histological groups are listed in Table D1.

Table D1: Cervical cancer by histological type

Type of cervical cancer	ICD-O-3 codes
1: Carcinoma	8010–8380, 8382–8576
1.1: Squamous cell carcinoma	8050–8078, 8083–8084
1.2: Adenocarcinoma	8140–8141, 8190–8211, 8230–8231, 8260–8265, 8310, 8380, 8382–8384, 8440–8490, 8570–8574, 8576
1.3: Adenosquamous carcinoma	8560
1.4: Other specified and unspecified carcinoma	ICD-O-3 codes for carcinoma excluding those for squamous cell carcinoma, adenocarcinoma and adenosquamous carcinoma
2: Sarcoma	8800–8811, 8830, 8840–8921, 8990–8991, 9040–9044, 9120–9133, 9150, 9540–9581
3: Other specified and unspecified malignant neoplasm	ICD-O-3 codes for cervical cancer, excluding those for carcinoma and sarcoma

Appendix E: Statistical methods

Crude rates

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

Age-specific rates

Age-specific rates provide information on the incidence of a particular event in an age group, relative to the total number of people at risk of that event in the same age group. It is calculated by dividing the number of events occurring in each specified age group by the corresponding ‘at-risk’ population in the same age group, and then multiplying the result by a constant (for example, 100,000) to derive the rate. Age-specific rates are often expressed per 100,000 population.

Age-standardised rates

A crude rate provides information on the number of, for example, new cases of cancer or deaths from cancer in the population at risk in a specified period. No age adjustments are made when calculating a crude rate. Since the risk of cancer is heavily dependent on age, crude rates are not suitable for looking at trends or making comparisons across groups in cancer incidence and mortality.

More meaningful comparisons can be made by using age-standardised rates, with such rates adjusted for age in order to facilitate comparisons between populations that have different age structures, for example, between Aboriginal and/or Torres Strait Islander peoples and non-Indigenous Australians. This standardisation process effectively removes the influence of age structure on the summary rate.

Two methods are commonly used to adjust for age: direct and indirect standardisation. In this report, the direct standardisation approach presented by Jensen and colleagues (1991) is used. To age-standardise using the direct method, the first step is to obtain population numbers and numbers of cases (or deaths) in age ranges, typically 5-year age ranges. The next step is to multiply the age-specific population numbers for the standard population (in this case, the Australian population as at 30 June 2001) by the age-specific incidence rates (or death rates) for the population of interest (such as those in a certain socioeconomic area or those who lived in *Major cities*). The next step is to sum across the age groups and divide this sum by the total of the standard population, to give an age-standardised rate for the population of interest. Finally, this is expressed per 1,000 or 100,000, as appropriate.

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Abbreviations

ABS	Australian Bureau of Statistics
ACD	Australian Cancer Database
ACT	Australian Capital Territory
AIHW	Australian Institute of Health and Welfare
CALD	culturally and linguistically diverse
AIS	adenocarcinoma in situ
AS	age-standardised
ASC	adenosquamous carcinoma
ASGS	Australian Statistical Geography Standard
CIN 1	cervical intraepithelial neoplasia grade 1
CIN 2	cervical intraepithelial neoplasia grade 2
CIN 3	cervical intraepithelial neoplasia grade 3
CST	Cervical Screening Test
d	definite
ERP	estimated resident population
DNA	deoxyribonucleic acid
HPV	human papillomavirus
HPV NAT	human papillomavirus nucleic acid testing
HSIL	high-grade squamous intraepithelial lesion
ICD	International Classification of Disease
ICD-O-3	International Classification of Diseases for Oncology, 3rd Edition
LBC	liquid based cytology
LSIL	low-grade squamous intraepithelial lesion
NACCHO	National Aboriginal Community Controlled Health Organisation
NCSP	National Cervical Screening Program
NCSR	National Cancer Screening Register
NHMD	National Hospital Morbidity Database
nKPI	national Key Performance Indicator
NMD	National Mortality Database
NOS	not otherwise specified
NIP	National Immunisation Program

NSW	New South Wales
NT	Northern Territory
p	possible
PPV	positive predictive value
Qld	Queensland
RA	remoteness area
RDE	raw data extract
SA	South Australia
SCC	squamous cell carcinoma
SEIFA	Socio-Economic Indexes for Areas
Tas	Tasmania
Vic	Victoria
WA	Western Australia

Symbols

. .	not applicable
n.a.	not available
n.p.	not publishable because of small numbers, confidentiality, or other concerns about the quality of the data
<	less than
>	greater than

Glossary

Aboriginal and/or Torres Strait Islander: A person of Aboriginal and/or Torres Strait Islander descent who identifies as an Aboriginal and/or Torres Strait Islander. See also **Indigenous**.

age-specific rate: A rate for a specific age group. The numerator and denominator relate to the same age group.

age-standardised rate: A rate derived by removing the influence of age when comparing populations with different age structures. This is usually necessary as the rates of many diseases vary strongly (usually increasing) with age. The age structures of the different populations are converted to the same 'standard' structure, which allows disease rates to be compared.

Australian Statistical Geography Standard: Common framework defined by the Australian Bureau of Statistics for collecting and disseminating geographically classified statistics; it replaced the Australian Standard Geographical Classification in July 2011.

biopsy: Small sample of tissue taken to obtain a definitive diagnosis of an abnormality.

cancer (malignant neoplasm): A large range of diseases in which some of the body's cells become defective and begin to multiply out of control. These cells can invade and damage the area around them and can also spread to other parts of the body to cause further damage.

cancer death: A death where the underlying cause of death is indicated as **cancer**. People with cancer who die of other causes are not counted in the **mortality** statistics in this publication.

Cervical Screening Test (CST): Consists of a human papillomavirus (HPV) test with partial genotyping and, if the HPV test detects oncogenic HPV, liquid based cytology (LBC).

cytology: The 'study of cells'; in the context of cervical **screening**, the cells from the cervix that are collected and examined for abnormalities.

endocervical abnormality (cytology): An endocervical result of 'E2 Atypical endocervical cells of uncertain significance', 'E3 Possible high-grade endocervical glandular lesion', 'E4 Adenocarcinoma in situ', 'E5 Adenocarcinoma in situ with possible microinvasion/invasion' or 'E6 Adenocarcinoma', regardless of the corresponding squamous result for that **cytology** test.

endocervical abnormality (histology): An endocervical result of 'HE02 Endocervical atypia', 'HE03.1 Endocervical dysplasia', 'HE03.2 Adenocarcinoma in situ', 'HE04.1 Microinvasive adenocarcinoma', 'HE04.2 Invasive adenocarcinoma', 'HE04.3 Adenosquamous carcinoma' or 'HE04.4 Carcinoma of the cervix (other)', regardless of any squamous result. Note that 'HE04.3 Adenosquamous carcinoma' and 'HE04.4 Carcinoma of the cervix (other)' are included as endocervical abnormalities for data reporting purposes, but that the former is not solely of endocervical origin, and the latter comprises rarer carcinomas of other epithelial origin.

false negative: A test that incorrectly indicates that the disease is not present.

false positive: A test that incorrectly indicates that the disease is present.

follow-up screening episode: Encompasses a follow-up HPV test and an LBC if this is required. Usually occurs at 12 months (or between 9 and 15 months) after the primary screening episode.

genotyping: The process of determining which genetic variants an individual possesses. In the context of cervical **screening**, it is used to determine whether an **HPV** test that is positive for **oncogenic HPV** is positive for HPV type 16 or 18.

histology: Examination of tissue from the cervix through a microscope, which is the primary diagnostic tool of the National Cervical Screening Program. Also referred to as **histological**.

histological: See **histology**.

HPV: An abbreviation for human papillomavirus, a virus that affects both males and females. There are around 100 types of HPV, with around 40 types known as 'genital HPV', which are contracted through sexual contact. Persistent infection with **oncogenic HPV** types can lead to cervical cancer, whereas infection with non-oncogenic types of HPV can cause genital warts.

incidence: The number of new cases (for example, of an illness or event) occurring during a given period, usually 1 year.

Indigenous: A person of Aboriginal and/or Torres Strait Islander descent who identifies as an Aboriginal and/or Torres Strait Islander. See also **Aboriginal and/or Torres Strait Islander**.

in situ: A Latin term meaning 'in place or position'; undisturbed.

morbidity: Illness.

mortality: The number of deaths occurring during a given period.

National HPV Vaccination Program: A program introduced on 1 April 2007, initially for females. At inception, it comprised an ongoing vaccination program for girls aged 12–13 (administered through schools) and a catch-up program for those aged 13–26 between 2007 and 2009, with girls aged 13–17 vaccinated through schools and women aged 18–26 vaccinated through the community. From February 2013, the current school-based program for girls aged 12–13 was extended to boys aged 12–13, with a catch-up program in 2013 and 2014 for boys aged 14–15.

negative cytology: A cervical **cytology** test where the squamous result is 'S1 Negative' and the endocervical result is either 'E0 No endocervical component' or 'E1 Negative'.

new cancer case: A person who has a new **cancer** diagnosed for the first time. One person may have more than 1 cancer and therefore may be counted twice in **incidence** statistics if it is decided that the 2 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 and others (1991).

no endocervical component: Defines a cervical **cytology** test with any squamous result and an endocervical result of 'E0 No endocervical component'. This means that no endocervical cells are present in the sample, and thus only the squamous cells in the sample can be assessed for the presence of abnormalities or cancer.

oncogenic: Cancer-causing.

oncogenic HPV: Those types of **HPV** associated with the development of cervical cancer. Currently, 15 oncogenic types of HPV are recognised. HPV types 16, 18, and 45 are most commonly associated with cervical cancer.

Pap test: A shortened expression for Papanicolaou smear – a procedure used to detect **cancer** and precancerous conditions of the female genital tract, and which was the **screening** test of the National Cervical Screening Program before 1 December 2017. During a Pap test, cells are collected from the transformation zone of the cervix – the area where the squamous cells from the outer opening of the cervix and glandular cells from the

endocervical canal meet. This is the site where most cervical abnormalities and cancers are detected. For conventional **cytology**, these cells are transferred onto a slide, and sent to a pathology laboratory for assessment. Collected cells are then examined under a microscope to look for abnormalities.

previous NCSP: The National Cervical Screening Program that used the **Pap test** as its primary **screening** tool; it ceased on 30 November 2017, to be replaced by the **renewed NCSP**.

primary screening episode: Encompasses a primary screening HPV test and an LBC if this is required.

renewed NCSP: The National Cervical Screening Program that uses **HPV** testing as its primary **screening** tool; it commenced on 1 December 2017.

screening: The application of a test to a population with no overt signs or symptoms of the disease in question to detect disease at a stage when treatment is more effective. The screening test is used to identify people who require further investigation to determine the presence or absence of disease, and is not primarily a diagnostic test.

The purpose of screening an asymptomatic individual is to detect early evidence of an abnormality or abnormalities – such as pre-malignant changes (for example, by **Cervical Screening Test**) or early invasive malignancy in order to recommend preventive strategies or treatment that will provide a better health outcome than if the disease were diagnosed at a later stage.

squamous abnormality (cytology): A squamous result of ‘S2 Possible low-grade squamous intraepithelial lesion’, ‘S3 Low-grade squamous intraepithelial lesion’, ‘S4 Possible high-grade squamous intraepithelial lesion’, ‘S5 High-grade squamous intraepithelial lesion’, ‘S6 High-grade intraepithelial lesion with possible microinvasion/invasion’ or ‘S7 Squamous cell carcinoma’, regardless of the corresponding endocervical result for that **cytology** test.

squamous abnormality (histology): A squamous result of ‘HS02 Low-grade squamous abnormality’, ‘HS03.1 Cervical intraepithelial neoplasia (CIN) not otherwise specified (NOS)’, ‘HS03.2 CIN 2’, ‘HS03.3 CIN 3’, ‘HS04.1 Microinvasive squamous cell carcinoma’ or ‘HS04.2 Invasive squamous cell carcinoma’, regardless of any endocervical result.

unsatisfactory cytology: A cervical **cytology** test where the squamous result is ‘SU Unsatisfactory’ and the endocervical result is ‘EU Unsatisfactory’, or where the squamous result is ‘SU Unsatisfactory’ and the endocervical result is either ‘E0 No endocervical component’ or ‘E1 Negative’. While not a true result per se, ‘unsatisfactory cytology’ means that, due to the unsatisfactory nature of the cells sampled, the pathologist is unable to determine a clear result. This may be due to either too few or too many cells, or to the presence of blood or other factors obscuring the cells, or to poor staining or preservation.

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Related material

National Cervical Screening Program monitoring report is an annual report. This and previous *Cervical screening in Australia* reports and their supplementary data tables are available at https://www.aihw.gov.au/reports-data/health-welfare-services/cancer-screening/overview.

You may also be interested in the following related publications:

AIHW (2019) *Cervical screening in Australia 2019*, catalogue number CAN 124, AIHW, Australian Government.

AIHW (2019) *Analysis of cervical cancer and abnormality outcomes in an era of cervical screening and HPV vaccination in Australia*, catalogue number CAN 129, AIHW, Australian Government.

AIHW (2020) *Cancer screening and COVID-19 in Australia*, catalogue number CAN 136, AIHW, Australian Government, accessed 15 November 2020. https://www.aihw.gov.au/reports/cancer-screening/cancer-screening-and-covid-19-in-australia/contents/how-has-covid-19-affected-australias-cancer-screening-programs

AIHW (2021) *Cancer screening and COVID-19 in Australia*, catalogue number CAN 137, AIHW, Australian Government.

AIHW (2023) *National Bowel Cancer Screening Program monitoring report 2023*, catalogue number CAN 154, AIHW, Australian Government.

AIHW (2023) *BreastScreen Australia monitoring report 2023*, catalogue number CAN 155, AIHW, Australian Government.

Data

Additional tables are available as online Excel tables at www.aihw.gov.au, under the 'Additional material' tab for this report. These tables contain detailed statistics for many of the tables and figures presented in summary form in both the body of the report and in Appendix A. Supplementary data tables have the prefix 'S' (for example, 'Table S1.1').

There are 5 Excel files, one for each stage of the screening pathway:

- Recruitment
- Screening
- Assessment
- Diagnosis
- Outcomes.

This is the fifth report to monitor the National Cervical Screening Program since it introduced 5-yearly HPV tests in December 2017. In 2018–2022, there were more than 5.2 million participants aged 25–74, and in 2022, 10% of screening HPV tests performed were positive for HPV types that cause cervical cancer. Cervical cancer incidence and mortality remained low at 11 new cases and 2 deaths per 100,000 women, respectively.

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