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Contents

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 Cervical Screening Tests (CST) for the target age group 25–74. A CST is a human papillomavirus (HPV) test, followed by a liquid-based cytology (LBC) test if oncogenic (cancer-causing) HPV is found.

Five years after its commencement, this is the fourth report to present data for the renewed NCSP. Data included in this report are for the calendar years 2018, 2019, 2020, and 2021.

Terminology

This report uses the terms 'people' and 'participants' when referring to data collected under the NCSP. These data are not restricted by sex or gender, with all cervical screening participants included in these data. For NCSP data, 'people' is defined as any person with a cervix. This 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.

Participation

Participation is measured over the same number of years as the screening interval. This is 5 years for the renewed NCSP. However, as 5 years have not yet passed since it was introduced, 5-year participation cannot yet be reported. In the interim, participation and coverage have been estimated for the years that are available, 2018–2021.

Over the 4 years 2018–2021, more than 4.2 million people aged 25–74 had a screening HPV test (primary screening or 12-month repeat HPV test). Participation has been estimated to be 62% of the eligible population.

Over the 4 years 2018–2021, more than 4.7 million people aged 25–74 had an HPV or LBC test for any reason. Coverage has been estimated to be 70% of the eligible population.

Response to invitation

Of the people aged 25–74 who were invited to screen or rescreen in 2021, 9% had an HPV test within 6 months. This means that 9% of people responded to an invitation to screen.

These data do not currently include people aged 30–74 whose previous Pap test was normal. While transitioning from 2-yearly to 5-yearly screens, this group are sent a reminder to rescreen after they are overdue, not an invitation to rescreen.

Screening results

Risk refers to the risk of significant cervical abnormality, and is determined by the primary screening episode result (a primary screening HPV test and, if indicated, an LBC test).

Of the 502,158 primary screening episodes in 2021 in participants aged 25–74:

- 89% were low risk
- 8% were intermediate risk
- 3% were higher risk
- fewer than 1% could not be assigned a risk (due to unsatisfactory or incomplete tests).

Correlation of screening results

In 2020, 70% of primary screening episodes in participants aged 25–74 that had an LBC that predicted a high-grade or glandular abnormality were followed within 6 months by histology with a result of high-grade abnormality or cervical cancer.

Screening HPV test positivity

Screening HPV test positivity is the proportion of valid primary screening HPV tests that detected oncogenic HPV. Of the 501,281 valid primary screening HPV tests performed in 2021 in participants aged 25–74:

- 2% were positive for oncogenic HPV type 16 or 18 (the two types of HPV that cause most cervical cancers)
- 9% were positive for oncogenic HPV types other than 16 or 18.

Self-collection

Participants who self-collect their cervical screening sample and whose primary screening HPV test detects oncogenic HPV types need to return to a practitioner for an LBC or attend for a colposcopy, depending on the oncogenic HPV types detected.

In 2021, of the 327 participants aged 30–74 whose self-collected primary screening HPV test detected an oncogenic HPV type other than 16 or 18, 60% had an LBC within 6 months.

In 2021, of the 130 participants aged 30–74 whose self-collected primary screening HPV test detected oncogenic HPV type 16 or 18, 69% had a colposcopy within 6 months.

Follow-up results

Participants with an intermediate risk primary screening episode have a 12-month repeat screening episode to determine if their risk changes to low risk or higher risk, or if it remains as intermediate risk.

Of the participants aged 25–74 who had a primary screening episode in 2020 of intermediate risk, 54% had a 12-month repeat screening HPV test between 9 and 15 months.

Of the 127,839 repeat screening episodes in 2021 in participants aged 25–74:

- 43% were low risk
- 43% were intermediate risk
- 13% were higher risk
- fewer than 1% could not be assigned a risk (due to unsatisfactory or incomplete tests).

Colposcopy

Participants with a higher risk primary or repeat screening episode are referred for colposcopy, which 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.

- Of the participants aged 25–74 who were referred for colposcopy in 2020, 55% had a colposcopy within 3 months. The median time to colposcopy was 62 days.
- A biopsy was performed in 39% of colposcopies for participants aged 25–74 in 2021.
- Of the participants aged 25–74 who had a colposcopy in 2020 following a higher risk screening test, 17% had a high-grade abnormality or cervical cancer detected on histology within 6 months of the colposcopy.
- The positive predictive value of colposcopies performed in 2020 for participants aged 25–74 was 63%.

High-grade cervical abnormality detection rate

Detection of high-grade abnormalities provides an opportunity for treatment before cancer can develop. The NCSP aims to detect high-grade abnormalities in line with its broader aim to reduce the incidence of cervical cancer.

In 2021, the high-grade detection rate for participants aged 25–74 was 17 participants with a high-grade abnormality detected by histology per 1,000 participants screened.

This means that, for every 1,000 participants screened, 17 had a high-grade abnormality detected, providing an opportunity for treatment before possible progression to cancer.

In contrast, for every 1,000 participants screened, 1 had a cervical cancer detected.

Cervical cancer incidence

In 2018, there were 851 women aged 25–74 diagnosed with cervical cancer, which is an incidence rate of 11 new cases per 100,000 women in the population.

Over the 5 years 2014–2018, there were 161 Aboriginal and Torres Strait Islander women aged 25–74 diagnosed with cervical cancer, which is an incidence rate of 19 new cases per 100,000 Indigenous women in the population.

Over the 5 years 2014–2018, the age-standardised incidence rate among Aboriginal and Torres Strait Islander women was 2.0 times the rate of non-Indigenous Australians.

Cervical cancer mortality

In 2020, there were 165 women aged 25–74 who died from cervical cancer, which is a mortality rate of 2 deaths per 100,000 women in the population.

Over the 5 years 2016–2020, there were 62 Aboriginal and Torres Strait Islander women aged 25–74 who died from cervical cancer, which is a mortality rate of 7 deaths per 100,000 Indigenous women in the population.

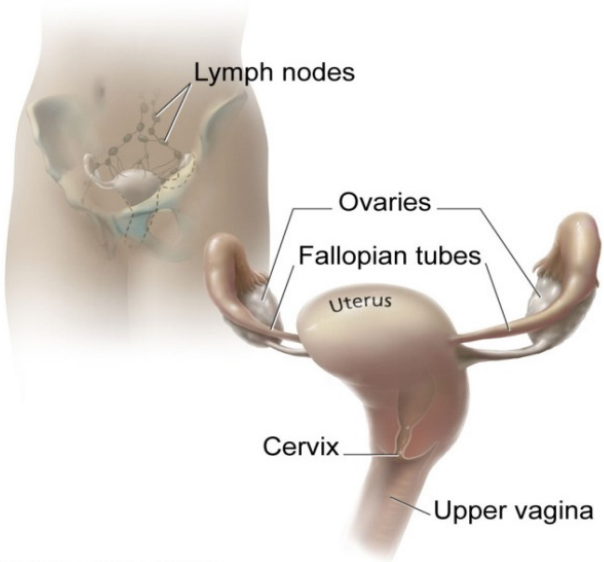
Over the 5 years 2016–2020, the age-standardised mortality rate among Aboriginal and Torres Strait Islander women was 3.8 times the rate of non-Indigenous Australians.

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).

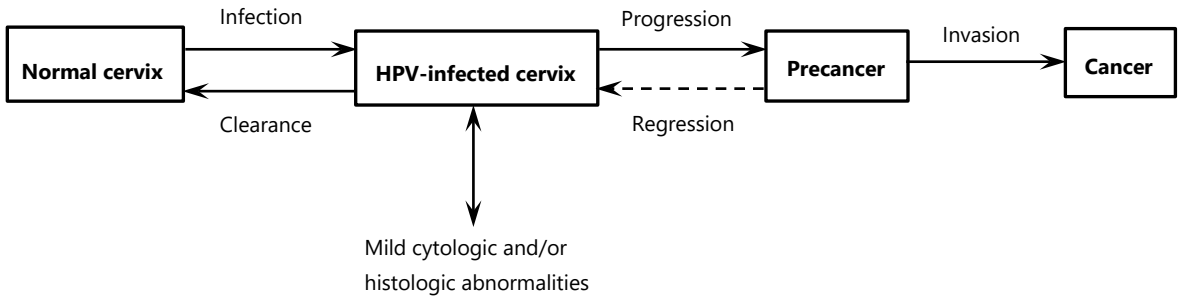
The 4 major steps in most cervical cancer development are:

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 means changes to the way that people are screened. Instead of people aged 20–69 having a Pap test every 2 years, people aged 25–74 now have a Cervical Screening Test (CST) every 5 years. The CST is an HPV test, followed by a liquid-based cytology (LBC) test if oncogenic HPV is found.

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, with participants 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, based on a participant's risk of significant cervical abnormality. This risk can be categorised as 'low risk', 'intermediate risk', or 'higher risk'.

The screening pathway starts with the collection of a sample for a CST, followed by the first step of a CST – 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, which 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 component of the CST are:

- oncogenic HPV not detected
- oncogenic HPV (not 16/18) detected
- oncogenic HPV 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 (not 16/18) detected' means that the participant is not at low risk, and that reflex LBC is required to determine their risk:
  - If the reflex LBC is unsatisfactory, a new sample will need to be collected and the LBC test (only) repeated in 6–12 weeks.
  - 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 repeat HPV test in 12 months.
    - At their repeat HPV test, they are considered **low risk** if there is no oncogenic HPV detected, and **higher 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).
    - A participant remains at **intermediate risk** if oncogenic HPV not 16/18 is detected at their repeat HPV test and the reflex LBC result indicates there is either no abnormality present or a low-grade abnormality, and will need to have a further repeat HPV test in another 12 months (the exceptions to this are participants 2 or more years overdue for screening at the time of the initial screen, participants who identify as Aboriginal or Torres Strait Islander, and participants age 50+ years, who are instead considered **higher risk)**.
    - At this further repeat HPV test, they will be allocated a final risk of **low risk** if there is no oncogenic HPV detected, and **higher risk** if any oncogenic HPV is detected (oncogenic HPV 16/18 or oncogenic HPV not 16/18).
  - 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**.
- '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.
- 'Unsatisfactory HPV test' means that a new sample will need to be collected and tested in 6–12 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 (that commenced when they had their CST).

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 repeat HPV test in 12 months, after which time 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** (repeat 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-collect screening pathway

There is a slightly different pathway for people who 'self-collect' a sample for their cervical screening test. Up until 30 June 2022, people 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, all people eligible to participate in cervical screening 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; 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

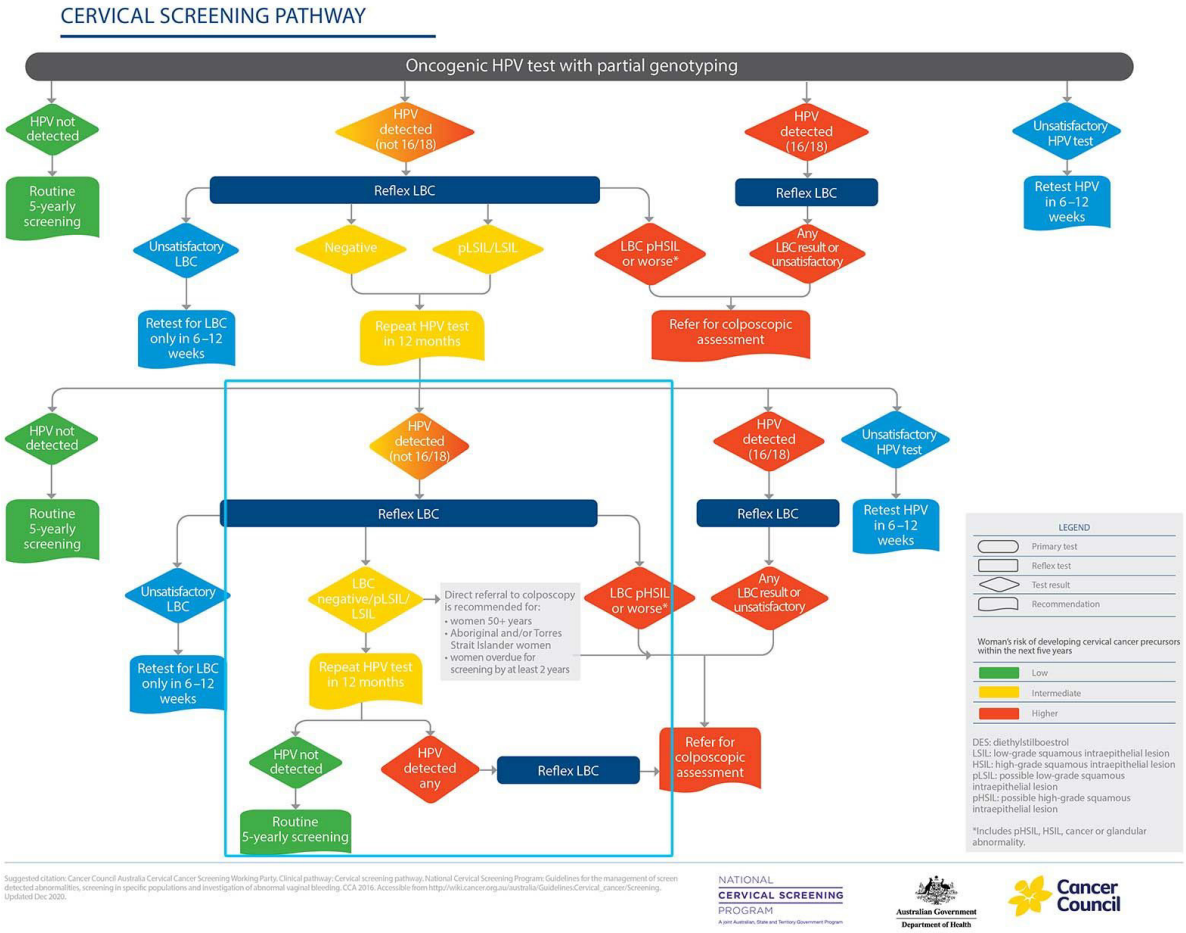
This screening pathway includes changes that came into effect on 1 February 2021.

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 their 12-month repeat HPV test and **low risk** if their 12-month repeat HPV test did not detect oncogenic HPV.

Based on a review of program data (Smith 2022), from 1 February 2021, participants with a 12-month repeat 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, participants who identify as Aboriginal or Torres Strait Islander, and participants aged 50+ years, who are managed as **higher risk**.

As some data in this report pre-date the change to the screening pathway, this report uses 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 2021.

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 12-month repeat HPV test and low risk if their 12-month repeat HPV test did not detect oncogenic HPV.

From 1 February 2021, participants with a 12-month repeat 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, participants who identify as Aboriginal or Torres Strait Islander, 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

The section of the pathway that has changed is indicated by the pale blue rectangle. 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 2021.

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 2021 Oct 19]. Available from: https://wiki.cancer.org.au/australia/Guidelines:Cervical_cancer/Screening.

A larger image can be accessed at https://wiki.cancer.org.au/australiawiki/images/4/4b/Flowchart_6_1_NEW.pdf

2.2 Monitoring key aspects of the National Cervical Screening Program

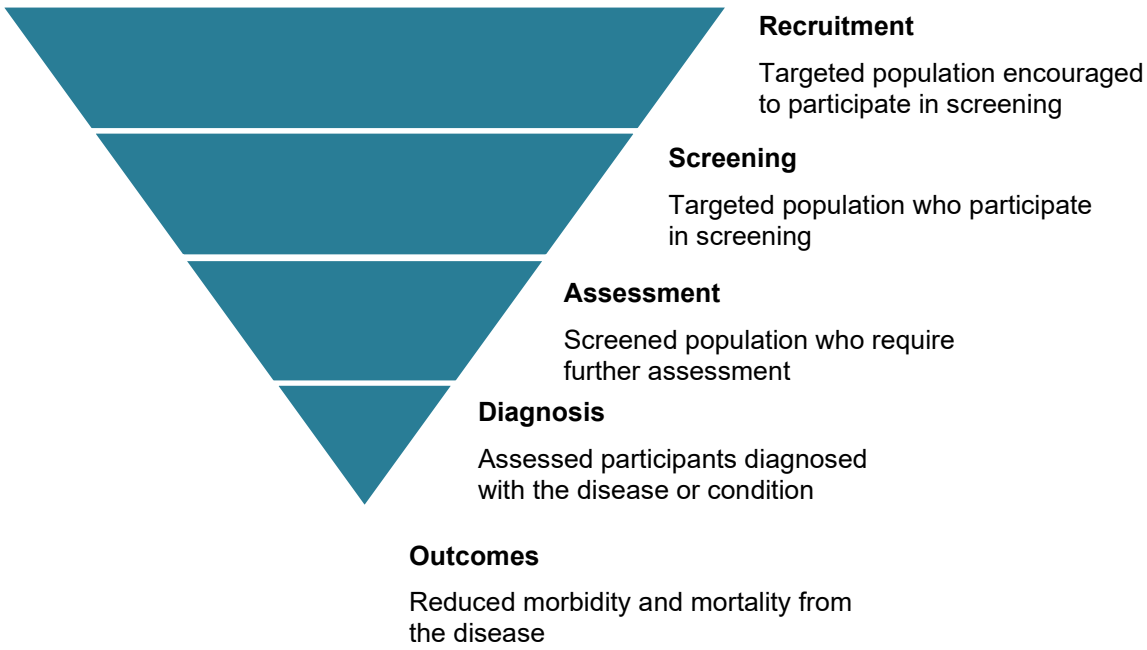
All population-based cancer screening programs require monitoring of their performance, quality, and safety. To facilitate this, the NCSP has performance indicators, quality standards and measures, and safety monitoring protocols. This report presents the latest data for the performance indicators of 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 2022 raw data extract (RDE) of version 4.4 of the NCSR (NCSR RDE 4.4 08/07/2022).

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

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

In this context, ‘people’ 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 also used to 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.

Many of the performance indicators in this report are reported for 2020 and 2021, which coincided with the COVID-19 pandemic in Australia. The transitional nature of the renewed NCSP makes it difficult to ascertain the short-term impacts of COVID-19 on cervical screening. Potential impacts have been detailed where appropriate in the text in this report.

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.

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, noting that 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.

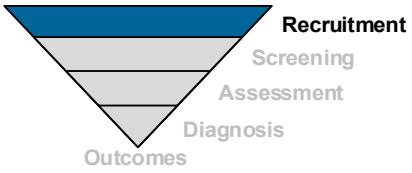
Performance indicators are grouped under each of the 5 population screening pathway stages of 'Recruitment', 'Screening', 'Assessment', 'Diagnosis', and 'Outcomes' (Figure 2.2). Note that in Table 3.1, the screening pathway entries 'Screening', 'Screening HPV test performance', 'Self-collection', and '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 Self-collection people positive for oncogenic HPV (not 16/18) who have an LBC test within 6 months	✓
	9 Self-collection people positive for oncogenic HPV 16/18 who have a colposcopy within 6 months	✓
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 people 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 but reported using an alternative approach; ×* = 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 people are invited to screen in the renewed NCSP; inclusion of 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

- 4,280,054 people aged 25–74 had a screening HPV test in 2018–2021. This equates to an estimated participation of 62.4% of the target population.
- 4,776,698 people aged 25–74 had an HPV or LBC test for any reason in 2018–2021. This equates to an estimated coverage of 69.6% of the target population.

Definition:

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

Rationale:

Higher participation in cervical screening means that more precancerous abnormalities can be detected and treated, before any progression to cervical cancer, thereby reducing the incidence of and mortality from cervical cancer.

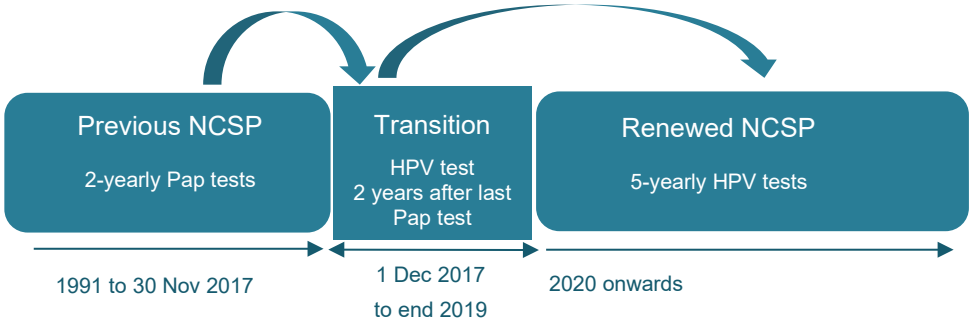
Guide to interpretation:

A higher participation rate is better.

Data considerations:

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, as illustrated in Figure 3.1.1.

Figure 3.1.1: Transition from 2-yearly Pap tests to 5-yearly screening HPV tests in the NCSP



This means that screening HPV tests in 2020, 2021 and 2022 will comprise those in participants who are overdue for their first screening HPV test, and people who are newly eligible for cervical screening – mostly due to turning 25. Participants who had their first screening HPV test between 1 December 2017 and the end of 2019 can return for their next screening HPV test in 5 years, from 1 December 2022.

This transition from 2-yearly Pap tests to 5-yearly HPV tests impacts the data – trends that include the years 2020, 2021 and 2022 are difficult to interpret, and estimates of participation are challenging. The year 2020 also saw the commencement of the COVID-19 pandemic in Australia, the consequences of which are explored in the relevant text.

Five years need to have passed since the inception of the renewed NCSP to allow participation to be measured as per the definition. This will first occur when cervical screening data for 2018–2022 are available.

In the interim, two alternative methods of deriving participation have been used: the first method adjusts the population to align with the number of years of screening data available to provide an estimate of participation; the second method does not adjust the population but instead represents the progression of participation towards 5-year participation.

Box 3.1.1: Definition of cervical screening participation and coverage

Since December 2020, participation has been defined as the number of people aged 25–74 who had a screening HPV test (primary screening or 12-month repeat HPV test) as a proportion of the number of eligible females aged 25–74 in the population.

This includes both the **estimate of participation**, and **progression towards 5-year participation**. This definition restricts participation to screening tests, which aligns with the definition of participation for Australia's other population-based cancer screening programs.

Coverage is the number of people aged 25–74 who had an HPV test or cytology test for any reason as a proportion of the number of eligible females aged 25–74 in the population, and was a measure introduced in December 2020 when the definition of participation was limited to only screening tests. 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.

Results

Participation over the 4 years 2018–2021

The calculation of participation in cervical screening is restricted to participants who had an HPV test in 2018, 2019, 2020, or 2021 for which the reason was primary screening HPV test or 12-month repeat HPV test. This excludes participants who had an HPV test for reasons other than screening (such as investigation of symptoms or test of cure).

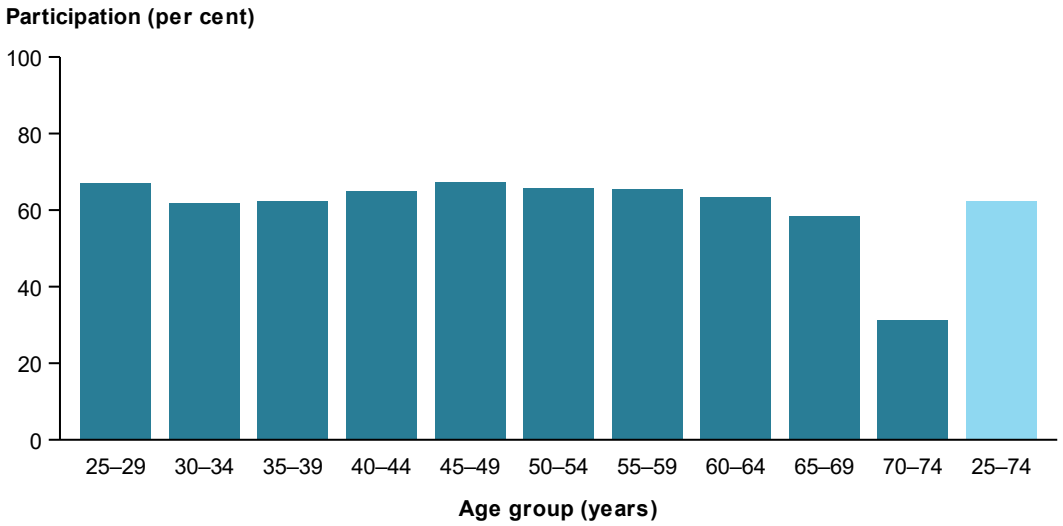
The denominator for 2018–2021 is the average number of females in the population aged 25–74 in 2018, 2019, 2020, and 2021, adjusted to remove the estimated number who have had a hysterectomy. This is known as the eligible population for cervical screening (noting that this eligible population will include 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 2018–2021, there were 4,280,054 participants aged 25–74 who had a screening HPV test, estimated to be 62.4% of the eligible population (62.6% when age-standardised to allow comparison over time or across population groups).

The highest participation in cervical screening was observed in participants aged 45–49 and 25–29, with 67.4% and 67.0% of these age groups respectively having a screening test in 2018–2021. The lowest participation was observed in participants aged 70–74, with only 31.3% of this age group screening (Figure 3.1.2). 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.

Participation estimates for the earlier reporting periods of 2018, 2018–2019 and 2018–2020 are available in Supplementary data tables, but are not appropriate for direct comparisons, as each reporting period represents an estimate of participation using all the years available at that time, not a trend over time.

Figure 3.1.2: Participation, by age, 2018–2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A1.1.

Participation by state and territory in 2018–2021

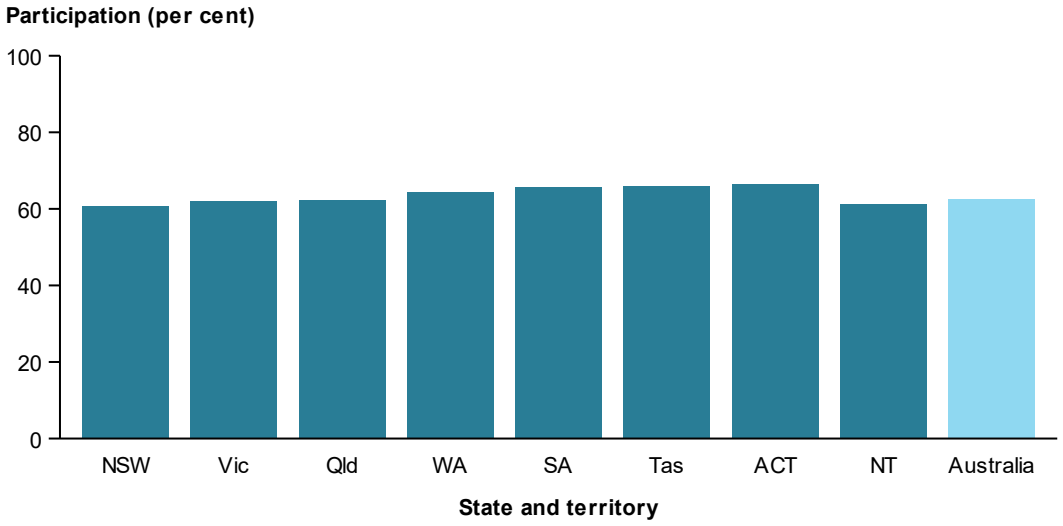
Participation in cervical screening across states and territories is shown in Figure 3.1.3.

Note that 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 60.8% and 66.6% (age-standardised).

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 that would otherwise be included in the numerators for participation in these two jurisdictions.

Figure 3.1.3: Participation, by state and territory, participants aged 25–74, 2018–2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A1.2.

Participation by remoteness area in 2018–2021

Participation in cervical screening was similar across most remoteness areas, although with a gradual decrease with increasing remoteness (Figure 3.1.4).

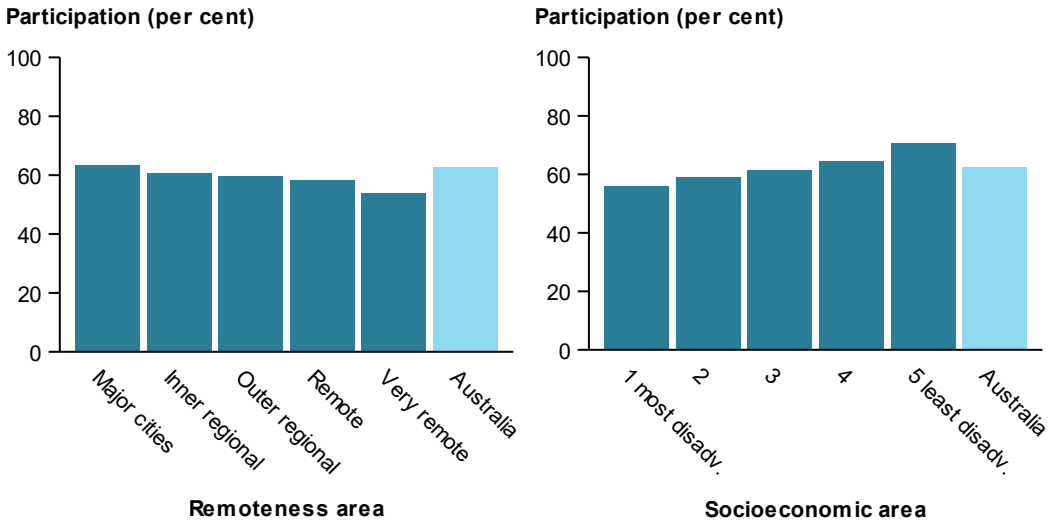
Age-standardised participation was highest for participants residing in *Major cities* at 63.3%, decreasing to 60.6% in *Inner regional*, 59.7% in *Outer regional* and 58.3% in *Remote* areas. Participation was lowest for participants residing in *Very remote* areas, at 53.7%.

Participation by socioeconomic area in 2018–2021

Participation in cervical screening increased with decreasing socioeconomic disadvantage (Figure 3.1.4).

Age-standardised participation was lowest for participants residing in areas with highest disadvantage at 56.0%, thereafter increasing with decreasing socioeconomic disadvantage, being highest for participants residing in areas of lowest disadvantage at 70.5%.

Figure 3.1.4: Participation, by remoteness area and socioeconomic area, participants aged 25–74, 2018–2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in tables A1.3 and A1.4.

Participation of Aboriginal and Torres Strait Islander people

There is evidence that Aboriginal and Torres Strait Islander people (hereafter respectfully referred to as Indigenous women or Indigenous Australians) are under-screened. Research using data linkage between the Queensland Health Admitted Patient Data Collection and data from the Queensland Health Pap Smear Register, provided important insights into participation of Indigenous women in cervical screening in Queensland.

In this study, the 2-year participation rate was more than 20 percentage points lower for Indigenous women than for non-Indigenous women for all reporting periods examined from 2000–2001 to 2010–2011; in 2010–2011, 2-year participation was 33.5% for Indigenous women and 55.7% for non-Indigenous women (Whop et al. 2016). This finding was more recently enriched, with 2008–2017 data used to examine spatial and temporal trends in participation. It was found that Indigenous women in Queensland had lower participation than the Queensland average for ≥88% of the small areas examined, and that these spatial inequalities in participation by Indigenous women persisted over time (Dasgupta et al. 2020).

The rate of cervical screening in Indigenous women attending Indigenous-specific primary health-care services is also measured as part of the National Key Performance Indicators (nKPIs) Data Collection. The latest data for December 2021 indicate that 39.4% of regular Indigenous clients had a cervical screening (HPV) test in the previous 5 years (AIHW 2022a). This collection however only covers data collected from Indigenous specific primary health care services.

It has not been possible to report Indigenous participation in cervical screening at the national level using cervical screening register data because, previously, the only source of cervical screening register data was pathology forms, which did not always include Indigenous status in all states and territories, with differences between public and private pathology laboratories.

Box 3.1.2: 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 people were tested for SARS-CoV-2 (the virus that causes COVID-19), and so the true infection rate for Aboriginal and Torres Strait Islander people 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 people on pathology forms for COVID-19 testing.

While this work is being 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 people, for example cancer and diabetes.

The NCSR provides two measures of Indigenous status, the majority of which are populated from Medicare (through the Medicare Voluntary Indigenous Identifier), with additional data from pathology forms and colposcopy reports to the NCSR, and from state and territory cervical screening register data that were collected primarily from pathology forms before their migration to the NCSR. These measures of Indigenous status are:

- 'Last identified Indigenous status' which indicates the most recently reported indigenous status on the NCSR from Medicare; and
- 'Ever Identified Indigenous status', which indicates if a participant has ever indicated they were of Aboriginal or Torres Strait Islander origin.

'Ever Identified Indigenous status' considers the history of Indigenous status from the various sources; for example, if a participant is identified as Indigenous on one pathology form but on no other data sources, they will be considered Indigenous in these data. Conversely, if a participant has never been identified as Indigenous on any data source, they will be categorised as 'Never indicated Aboriginal or Torres Strait Islander' in these data.

The level of incomplete Indigenous identification in the NCSR does not support the estimation of participation by Indigenous status using the same methodology used for other population groups – 27.5% of participants aged 25–74 who had a screening HPV test in 2018–2021 had not stated their Indigenous status according to their 'Last identified Indigenous status' (there is no equivalent 'not stated' category for 'Ever Identified Indigenous status') (Table A1.5).

Further work will need to occur over the coming years to improve Indigenous identification in the NCSR and to explore additional methodology to enable participation for Aboriginal and Torres Strait Islander people to be estimated using NCSR data. Any alternative methodology would require appropriate consultation and endorsement by Aboriginal and Torres Strait Islander organisations and advisory groups to ensure that it is robust, useful, and acceptable to Aboriginal and Torres Strait Islander people.

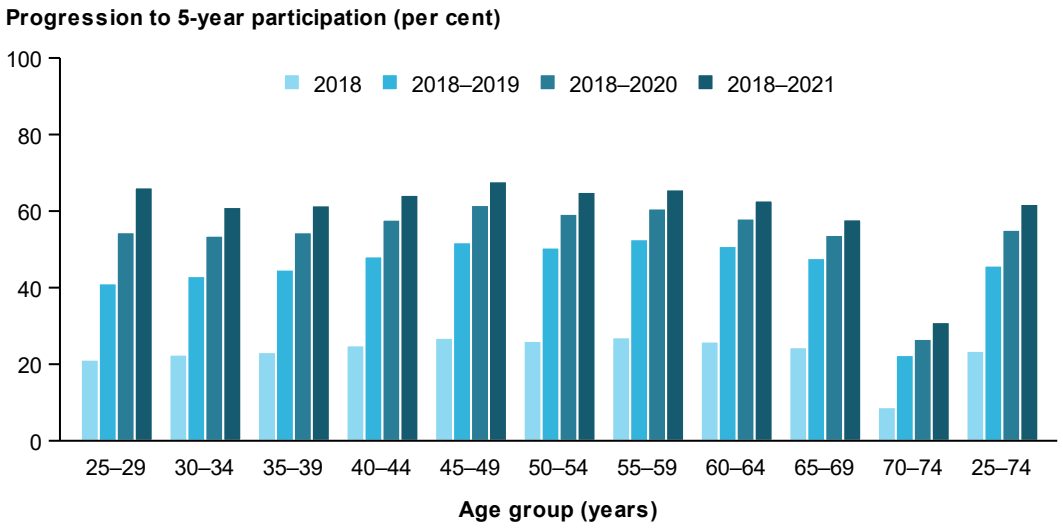
Progression towards 5-year participation in the 5 years 2018–2022

This measure of participation uses the population that will be used for 5-year participation over the years 2018–2022, which will be the first data to allow 5-year participation in the renewed NCSP to be calculated. Each year, the numerator is increased by a calendar year, while the denominator remains the same. This measures progression towards 5-year participation. Currently the years 2018, 2018–2019, 2018–2020, and 2018–2021 can be reported. A further year of data will allow the years 2018–2022 to additionally be reported, at which time the progression towards 5-year participation for 2018–2022 will be complete.

Using this methodology for those aged 25–74, there were 1,624,416 participants in 2018, representing 23.5% of the population for 2018–2022. This increased to 3,166,291 participants in 2018–2019 (45.8% of the population for 2018–2022) and increased again to 3,812,160 participants in 2018–2020 (55.1% of the population for 2018–2022). There were 4,280,054 participants in 2018–2021, representing 61.9% of the population for 2018–2022.

Progression towards 5-year participation by age is shown in Figure 3.1.5. It is apparent that there has been a greater proportion of participants screening aged 25–29 in 2018–2021 compared with the previous reporting periods. Box 3.1.3 provides a spotlight on this age trend as participation progresses towards 5 years.

Figure 3.1.5: Progression towards 5-year participation, by age, 2018, 2018–2019, 2018–2020, and 2018–2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A1.7.

Box 3.1.3: Spotlight on progression to 5-year participation for age 25–29

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.

Notably, both in the renewed NCSP for the 2018–2019 and the previous NCSP, younger participants had the lowest levels of participation in cervical screening.

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 participation in 2018–2021 deviating from this pattern, with a greater proportion of people in the youngest age group 25–29 participating in the years 2020 and 2021.

As a result, participants aged 25–29 had one of the highest levels of participation in cervical screening across the age groups in 2018–2021.

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.

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 people 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 4 years 2018–2021

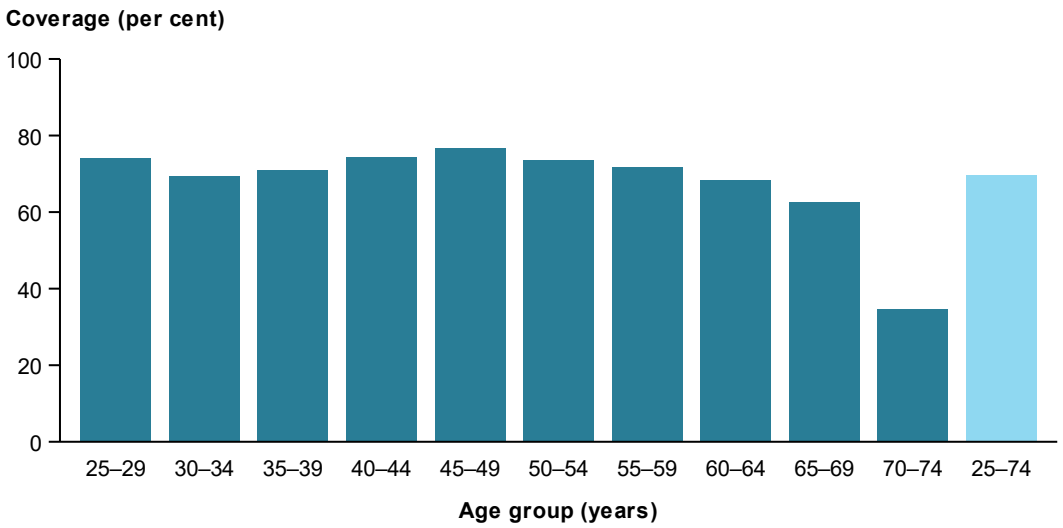
While the calculation of participation is restricted to participants who had an HPV test in the reporting period for which the reason was primary screening HPV test or 12-month repeat HPV test, it is also useful to measure the proportion of the population who are eligible to screen who have any cervical screening test, as some participants do not have a screening HPV test 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 repeat 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 2018–2021, there were 4,776,698 participants aged 25–74 who had an HPV or LBC test for any reason. This is an estimated coverage rate of 69.6% of the eligible population (69.9% when age-standardised to allow comparison over time or across population groups).

The highest coverage was in participants aged 45–49, with around 76.5% of this age group having an HPV or LBC test for any reason in 2018–2021. Coverage was lowest at 35% for participants aged 70–74 (Figure 3.1.6). 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 in this age group.

Figure 3.1.6: Coverage, by age, 2018–2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A1.10.

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 A1.12.

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 A1.12).

Number of cervical screening tests over the 4 years 2018–2021

Measures of participation are based on the number of participants who had a cervical screening test. However, it is also useful to observe the number of cervical screening tests that are performed. Therefore, the number of cervical screening tests that are included in the definition of participation – primary screening HPV tests and 12-month repeat HPV tests – are shown.

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. This definition was chosen to restrict activity to participants not at increased risk of a significant cervical abnormality, which may have influenced their decision to screen. Activity has continued to be reported every 3 months 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.

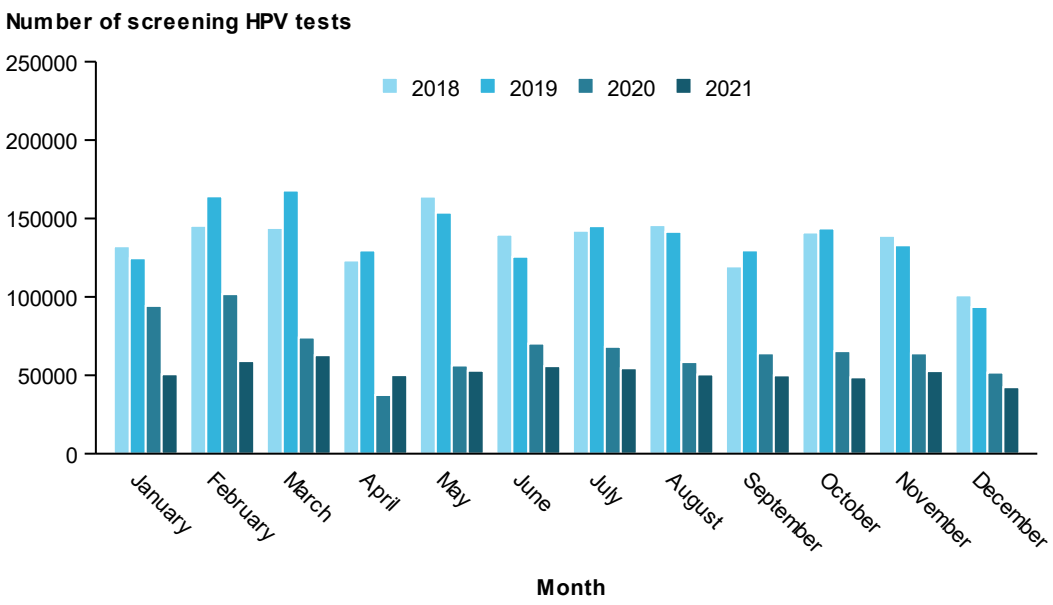
The number of cervical screening tests (primary screening HPV tests and 12-month repeat HPV tests) performed each month over the years 2018, 2019, 2020, and 2021 is shown in Figure 3.1.7. Most noticeable is the markedly lower number of cervical screening tests in 2020 and 2021 compared to 2018 and 2019. 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 explained more fully in Box 3.1.4.

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, which were lower in each month apart from April 2021 during it was higher, and May 2021 during which it was similar.

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



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A1.13.

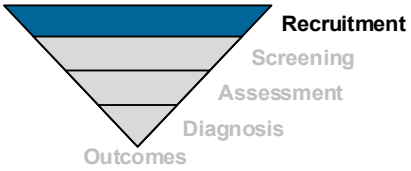
Box 3.1.4: Number of cervical screening tests expected to be lower from 2020

The number of Cervical Screening Tests conducted was expected to be lower in 2020 than in 2018 and 2019, irrespective of the COVID-19 pandemic and subsequent restrictions.

This is largely due to the program changing from 2-yearly Pap tests to 5-yearly Cervical Screening Tests from December 2017. Most screening participants were due for their first HPV test 2 years after their last Pap test, which was during the years 2018 and 2019, after which they could move to 5-yearly screening. Participants who had their first screening HPV test between 1 December 2017 and the end of 2019 can return for their next screening HPV test in 5 years, from 1 December 2022.

This means that screening HPV tests in 2020, 2021 and 2022 will comprise those in participants who are overdue for their first screening HPV test, and people who are 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 and 2021 compared to 2018 and 2019, as illustrated in Figure 3.1.7.



Performance Indicator 2: Response to invitation

Summary of response to invitation data

Of the 1,728,874 people aged 25–74 sent an invitation to screen or rescreen in 2021, 9.0% had an HPV test within 6 months.

Definition:

The percentage of people aged 25–74 invited to screen or rescreen in a calendar year and who screened within 6 months.

Rationale:

How many people screen in response to an invitation provides a measure of the effectiveness of sending invitations. Measuring response to invitation by mode of invitation will also provide useful information as to the most effective method of inviting people (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.

Where a person was sent multiple invitations in the index year, the first invitation that was not followed by a 'Return to Sender' notification was selected.

It is not possible to know how many people 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: people do not need to receive an invitation 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: at present, there is a large group of people who are not being sent invitations, and so are not included in these data. Specifically, these data do not currently include people aged 30–74 whose previous Pap test was normal. While transitioning from 2-yearly to 5-yearly screens, this group are sent a *reminder* to rescreen after they are overdue, not an *invitation* to rescreen. As this indicator is restricted to invitations, they are not included.

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

Results

In 2021, there were 1,728,874 people aged 25–74 sent an invitation to screen or rescreen. Of these, 155,942 had an HPV test within 6 months of the date the invitation was sent. This was 9.0% of people aged 25–74 who were sent an invitation in 2021.

Response to invitation by age

Response to invitation is shown by age in Figure 3.2.1.

In 2021, the highest number of invitations to screen or rescreen was to people aged 25–29.

There were 338,410 people aged 25–29 invited to screen in 2021, of whom 43,660 had an HPV test. This age group had the highest response to invitation of 12.9%. Next highest were people aged 70–74, to whom 256,601 invitations were sent. The response rate of this age group was the lowest at 3.6%, with 9,181 having an HPV test within 6 months.

For age groups between 30–34 and 65–69, the response to invitation ranged between 7.2% (for people aged 65–69) and 10.4% (for people aged 40–44) (Figure 3.2.1).

These data do not currently include people aged 30–74 whose previous Pap test was normal (while transitioning from 2-yearly to 5-yearly screens, this group are sent a reminder to rescreen after they are overdue, not an invitation to rescreen), and so may not be indicative of the response to invitation rate of all participants.

Following transition, this group of people will be sent an invitation to rescreen rather than a reminder to rescreen, at which time they will be included in response to invitation data.

Box 3.2.2: Response to invitation to screen or rescreen for ages 25–29

During the transition from 2-yearly Pap tests to 5-yearly HPV tests, most people invited to screen and rescreen have been those aged 25–29, who are invited to screen as they reach the target age group for the NCSP.

In each of the years 2018 to 2021, of the invitations to screen (letter type A1) sent to people of all ages, around 99% have been sent to people aged 25–29.

Looking at all letter types sent over those years, for people of all ages:

In 2018, of the 15,303 invitations to screen or rescreen, 85.1% were to ages 25–29.

In 2019, of the 363,950 invitations to screen or rescreen, 71.2% were to ages 25–29.

In 2020, of 167,904 invitations to screen or rescreen, 79.5% were to ages 25–29.

In 2021, of 1,731,435 invitations to screen or rescreen, 19.5% were to ages 25–29.

Consequently, the response rate of people aged 25–29 has had a great impact on the overall response to invitation rate for the target age group for the years 2018 to 2020.

In 2018, the response rate was 28.5% for 25–29, compared with 25.2% for 25–74.

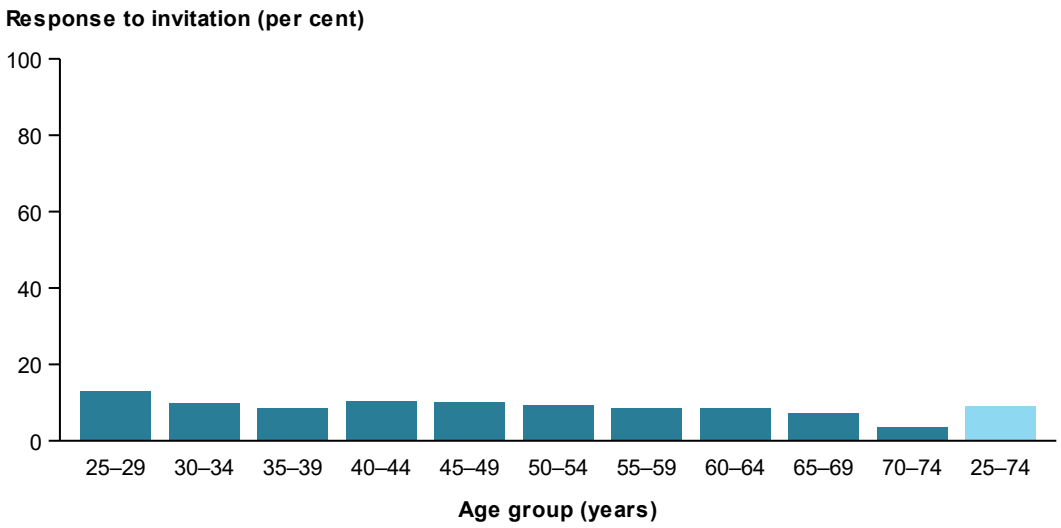
In 2019, the response rate was 16.5% for 25–29, compared with 17.6% for 25–74.

In 2020, the response rate was 12.4% for 25–29, compared with 12.7% for 25–74.

Conversely, in 2021, 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 ages 25–29 does not impact the overall response rate in 2021 as much as in previous years.

In this latest year, the response rate was 12.9% for 25–29, compared with 9.0% for 25–74.

Figure 3.2.1: Response to invitation to screen or rescreen within 6 months, by age, 2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A2.1.

Response to invitation by letter type

The proportion of people 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.

Invitations with the highest response were letter type ‘A1 Invitation to screen’, with 12.9% of people sent this letter type having an HPV test within 6 months. These largely represent people who are invited to screen as they reach the target age group.

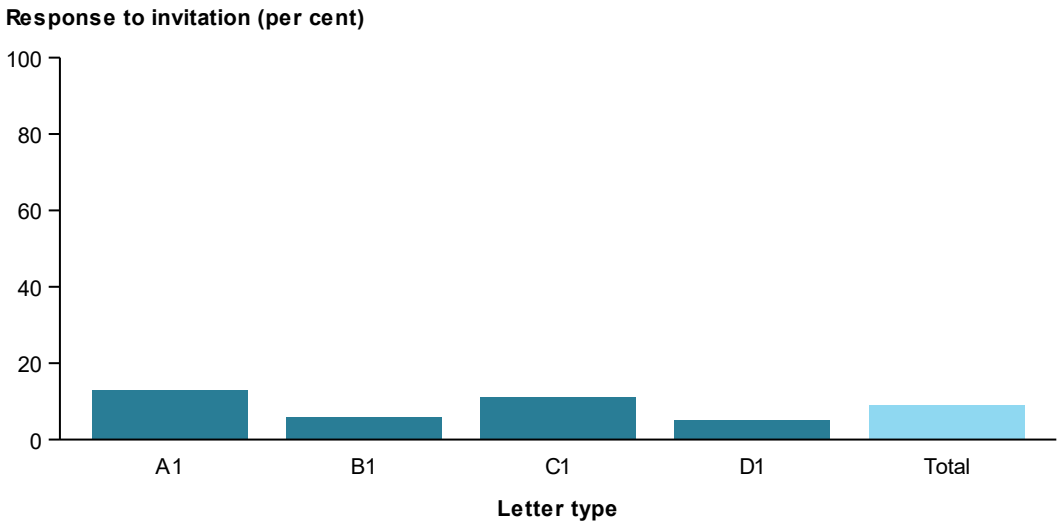
Invitations with the next highest response were letter type ‘C1 Invitation to rescreen’, with 11.0% of people sent this letter type having an HPV test within 6 months.

After transition, this invitation type will be used for people due for a rescreen 5 years after their last HPV test. During the transition, however, it is most likely used to invite people with prior abnormalities to rescreen. This may have an impact on whether people have an HPV test within 6 months.

Response was lower for people invited to screen or rescreen who were eligible to self-collect, with 5.8% of people sent ‘B1 Invitation to screen eligible to self-collect’ and 5.2% of people 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 people 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 people 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, people aged 25–74, 2021



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 4.4 08/07/2022). Data and notes for this figure are available in Table A2.2.

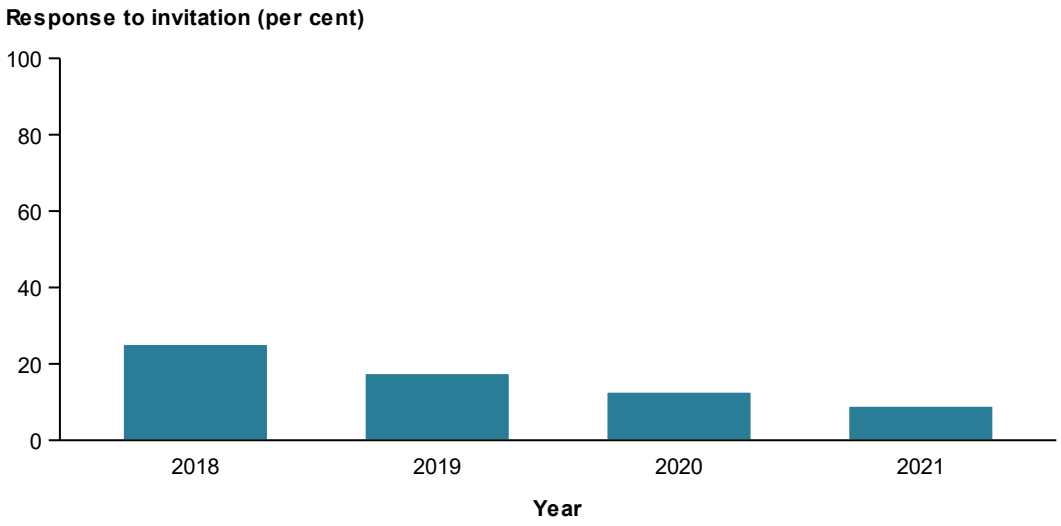
Response to invitation trends

Response to invitation is shown for the years 2018 to 2021 in Figure 3.2.3.

While there are year-to-year differences in the response to invitation to screen or rescreen, it should be noted that it can be difficult to interpret trends during the transition period of the NCSP, as the cohorts of people invited over these years may not be comparable.

Response to invitation to screen or rescreen for people aged 25–74 was 25.2% in 2018, 17.6% in 2019, 12.7% in 2020 and 9.0% in 2021.

Figure 3.2.3: Response to invitation to screen or rescreen within 6 months, by year, people aged 25–74, 2018 to 2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A2.4.

While this appears to be a strong downward trend in response to invitation over time, the number of people invited each year differed substantially over these years. This was 15,293 in 2018, 363,420 in 2019, 167,416 in 2020, and 1,728,874 in 2021.

Given the large year-to-year 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.

Invitation to screen and rescreen trends

As the denominator for the response to invitation measure, it is useful to look at the number of invitations sent to provide context for the data shown above.

The number of invitations sent in 2018 was very low at 15,293. This is because, apart from for higher risk participants, the NCSR only commenced sending invitations to screen or rescreen in November and December of that year. The number of invitations was higher in 2019 at 363,420. The number of invitations then dropped in 2020 to 167,416, which is an expected response to the program changing from 2-yearly to 5-yearly screens, since invitations to screen in 2020 will primarily have been sent to people who were newly eligible for cervical screening – mostly due to turning 25.

While it was expected that this trend of lower invitations to screen in 2020 would also extend into 2021, there was actually a large increase in the number of invitations to screen or rescreen sent in 2021 compared to 2020. At 1,728,874, this number also eclipsed the number of invitations to screen or rescreen sent in 2018 and 2019.

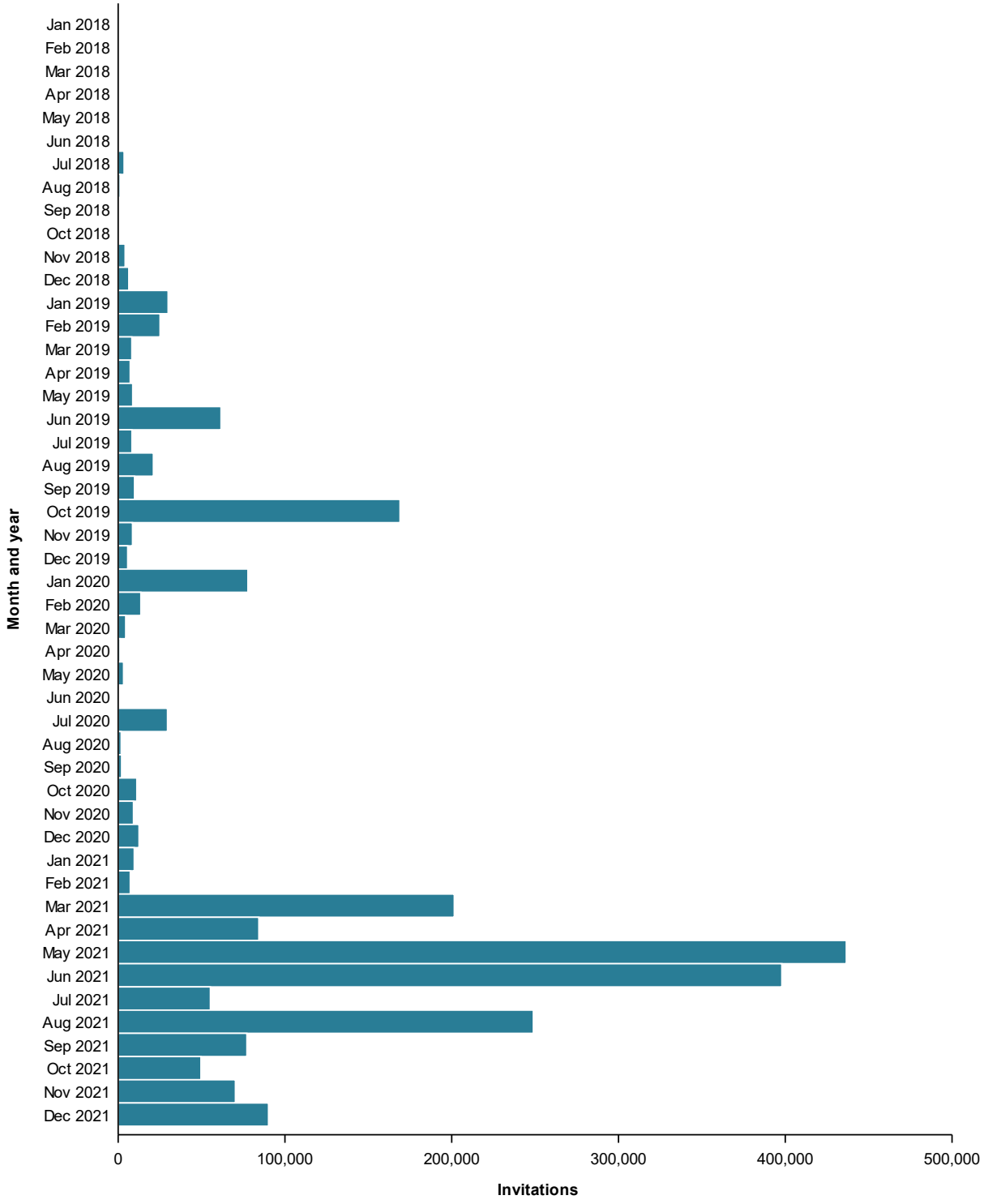
In 2021, the NCSP conducted a pilot study to determine whether response to invitation of never screened and under screened people could be increased by the use of a tailored intervention letter rather than a standard invitation letter. This meant that, commencing in the second half of 2021, a large number of invitations were sent as part of this study, which would have contributed to the higher-than-expected numbers of invitations sent in 2021.

Month-to-month trends for the number of invitations to screen or rescreen are shown in Figure 3.2.4, commencing in January 2018 and continuing through to December 2021.

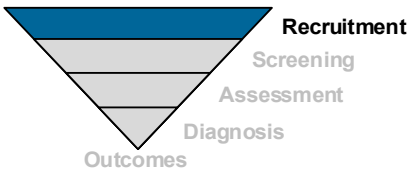
As noted earlier, there were not many invitations sent in 2018, with larger numbers commencing in November and December 2018. Throughout 2019 there were larger peaks, notably in June with around 60,000 invitations and October with close to 170,000 invitations to screen or rescreen sent. Invitations in 2020 were lower, with peaks in January and June.

The increase in the number of invitations sent in 2021 is apparent from March, though a large portion of the increase in the number of invitations sent occurred in May and June 2021, with around 400,000 invitations sent in each of these months. A further peak of around 250,000 occurred in August 2021, which is likely related to the pilot study described earlier.

Figure 3.2.4: Number of invitations sent, by month, people aged 25–74, 2018 to 2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).



Performance Indicator 3: Rescreening

Summary of rescreening data

Of the 58,640 participants aged 25–69 who screened in 2018 and rescreened before the end of 2021:

- 41.9% rescreened within 2 years
- 17.2% rescreened at around 2 years
- 40.9% rescreened more than 2 years after their previous screen

Definition:

The percentage of people 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 often than recommended increases costs, with minimal or no reduction in incidence and/or mortality; screening less often than recommended decreases overall participation in screening and means that fewer people with precancerous abnormalities can be treated – necessary to achieve the overall aim of reducing incidence and mortality from cervical cancer. This indicator measures the proportion of people who rescreened early, appropriately, or late**.**

Guide to interpretation:

For those participants recommended to rescreen in 5 years, a higher rescreen rate within 4.5–5.5 years 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 5.5 years of an HPV test under the renewed NCSP.

In the interim, an alternative method of deriving rescreening was used that determined the time between a participant's last normal Pap test and their first screening HPV test, and allocated this into early rescreen (fewer than 21 months), appropriate rescreen (between 21 months and 3 years) and late rescreen (between 3 and 5 years). This was possible for the years 2018 and 2019 but is not a useful measure from the year 2020, as the majority of people having their first screening HPV test from 2020 are, by definition, rescreening late.

Therefore, until adequate time has passed to measure rescreening as it has been defined, a second interim measure has been introduced that measures the occurrence of early rescreening within the renewed NCSP. This alternative method determines the time between a participant's first screening HPV test in 2018 and their subsequent screening HPV test, and allocates this into 'Less than 2 years', '2 years (21–27 months)', or 'More than 2 years'.

Results

While rescreening cannot be reported according to the formal definition until 5 years have passed since the introduction of the renewed NCSP, it is worthwhile looking at the number of participants who have rescreened early within the renewed NCSP. While this could represent participants selecting to rescreen earlier than recommended, there are some circumstances for which it is appropriate to rescreen earlier than 5 years. For example, immunosuppressed participants are recommended to screen at 3-yearly intervals rather than 5-yearly intervals.

Of the participants aged 25–69 who screened for the first time in the renewed NCSP in 2018, 58,640 rescreened before the end of 2021. Of these 58,640 participants 24,553 (41.9%) rescreened within 2 years, 10,081 (17.2%) rescreened at around 2 years, and 24,006 (40.9%) rescreened more than 2 years after their previous screen (Table 3.3.1).

Table 3.3.1: Time to rescreen, participants aged 25–69 screened in 2018

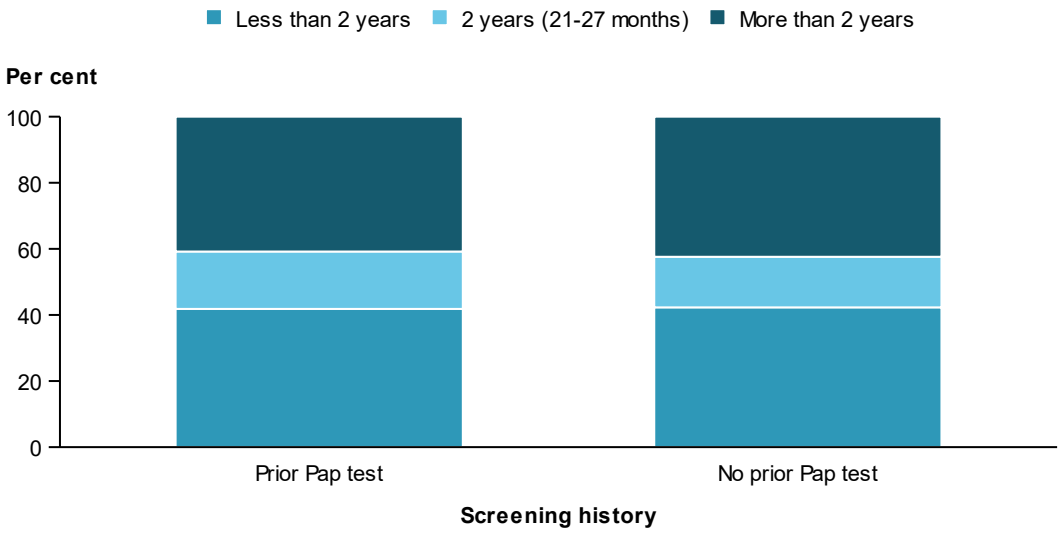
Time to rescreen	Number	Per cent (%)
Less than 2 years	24,553	41.9
2 years (21–27 months)	10,081	17.2
More than 2 years	24,006	40.9

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

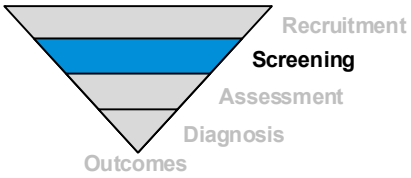
These results can be further broken down into two cohorts: those that had a prior Pap test under the previous NCSP, and those whose first cervical screening test was an HPV test under the renewed NCSP (no prior Pap test). By comparing these cohorts, it may be possible to determine whether participants who rescreen early are doing so due to previous practices, or if there is another cause for early rescreening.

It was found that 17.4% of participants who had previously had a Pap test rescreened 2 years after their HPV test in 2018, while 15.3% of participants who had never had a Pap test rescreened 2 years after their HPV test in 2018 (Figure 3.3.1; Tables A3.1 and A3.2).

Figure 3.3.1: Proportion of participants who rescreened early, by time to rescreen, and screening history, participants aged 25–69 screened in 2018



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A3.1 and Table A3.2.



Screening

Performance Indicator 4: Screening results

Summary of screening results data

Of the 502,158 primary screening episodes in 2021 in participants aged 25–74:

- 88.7% were low risk
- 8.2% were intermediate risk
- 2.8% were higher risk
- 0.4% could not be assigned a risk

Definition:

The percentage of primary screening episodes in each risk category in a calendar year in people aged 25–74.

Rationale:

Distribution of primary 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 type 16 or 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 an oncogenic HPV type other than 16 or 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 an oncogenic HPV type other than 16 or 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.

Results

In 2021, there were 509,945 primary screening episodes, 502,158 of which occurred 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 502,158 primary screening episodes in 2021 in participants aged 25–74:

- 445,432 (88.7%) were low risk
- 40,929 (8.2%) were intermediate risk
- 13,990 (2.8%) were higher risk
- 1,807 (0.4%) 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 an oncogenic HPV type, likely because either a participant did not return for a subsequent LBC test, or an LBC test was not performed at colposcopy following 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, 2021

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*	864	442,763	257	114
LBC Unsatisfactory	3	91	584	221
LBC Negative	2	2,669	27,513	6,184
LBC Squamous low-grade abnormality	6	106	13,310	2,838
LBC Squamous high-grade abnormality or squamous cell carcinoma	2	5	2,521	1,862
LBC Glandular abnormality or adenocarcinoma	0	0	64	179

* 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 4.4 08/07/2022).

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 types. Of the 445,634 tests of this type, 442,763 did not have a reflex LBC, and among the 2,871 that did have a reflex LBC, 2,669 had a negative LBC.

Intermediate risk

Intermediate risk screening results were in participants who had a primary screening HPV test that detected oncogenic HPV types other than 16 and 18, and had a reflex LBC that was negative or indicated a low-grade squamous abnormality. This constituted 40,823 of the 44,249 screening HPV tests of this type. There were also 106 screening episodes in which the primary screening HPV test did not detect oncogenic HPV types 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 type 16 or 18 and/or who had a reflex LBC that indicated a high-grade squamous abnormality, squamous cell carcinoma, or any glandular abnormality. There were 11,398 screening episodes in participants who had a primary screening HPV test that detected oncogenic HPV type 16 or 18 irrespective of their reflex LBC result, with a further 2,592 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 875 screening episodes, and to an unsatisfactory reflex LBC for 678 screening episodes (3 screening episodes had both an unsatisfactory primary screening HPV test and an unsatisfactory reflex LBC, so are counted in both groups).

There were also 257 screening episodes that could not be assigned a risk due to the absence of a reflex LBC.

Unsatisfactory screening episodes

Irrespective of whether a risk was assigned, in 2021 there were 1,776 unsatisfactory screening episodes, either due to an unsatisfactory primary screening HPV test or an unsatisfactory reflex LBC (or in some cases both). These comprised 0.4% of all screening episodes in participants aged 25–74 in 2021, with around half being due to an unsatisfactory HPV test and around half being due to an unsatisfactory LBC.

Primary screening episode risk by age

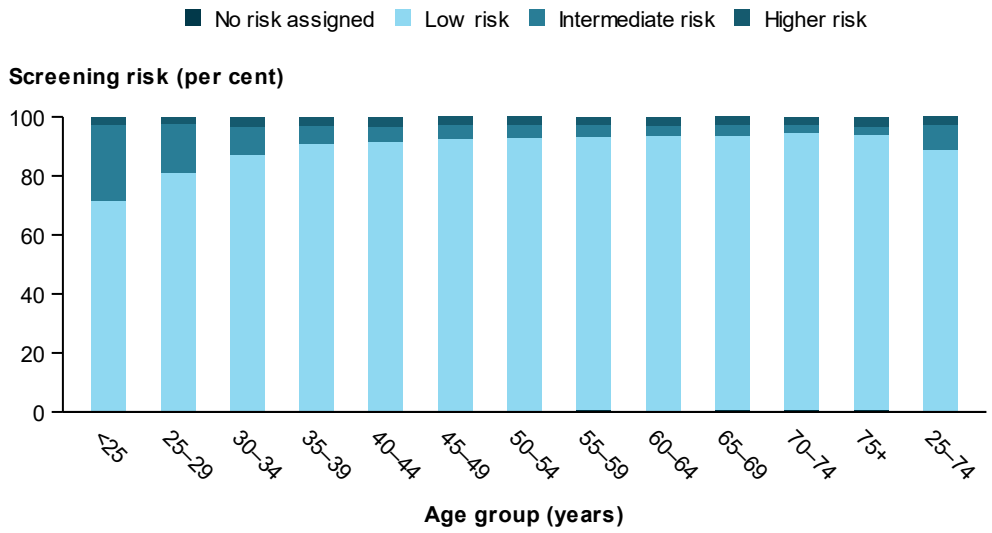
Risk categories for each age group are shown in Figure 3.4.1.

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 an oncogenic HPV type other than 16 or 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, 2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A4.1.

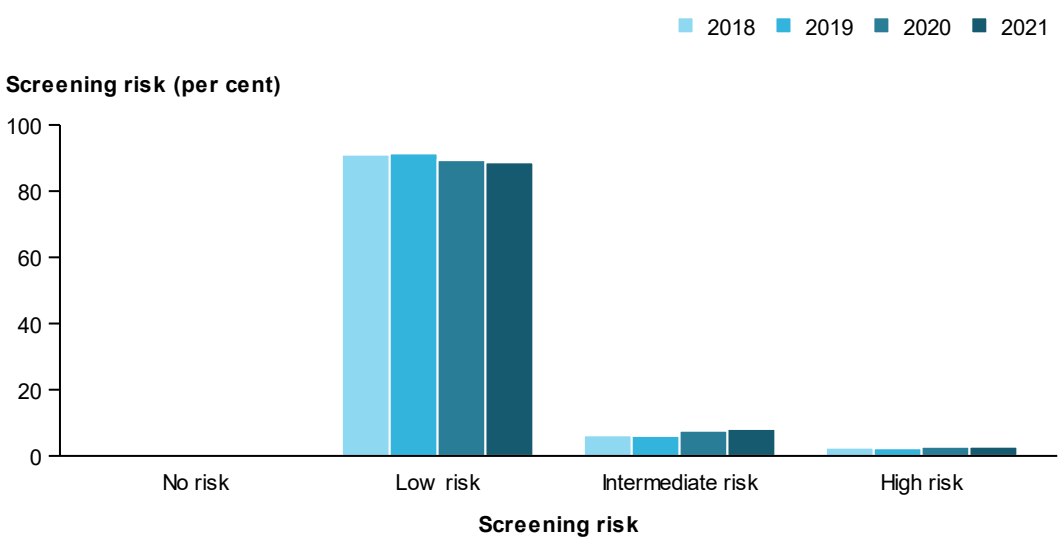
Primary screening episode risk trends

Between 2018 and 2021, there have been only small changes in the proportion of screening episodes that were low risk, intermediate risk, and higher risk.

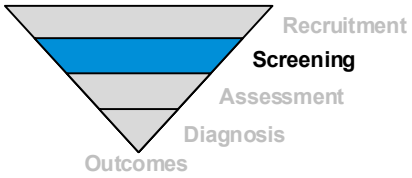
Risk categories for each year are shown in Figure 3.4.2.

The proportion of screening episodes that were low risk has decreased slightly from 91.0% in 2018 to 88.7% in 2021, whereas the proportion that were intermediate has increased from 6.2% in 2018 to 8.2% in 2021. 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 2021.

Figure 3.4.2: Primary screening episode risk, by year, participants aged 25–74, 2018 to 2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). 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 2020, there were 5,725 primary screening episodes that had an LBC that predicted a high-grade or glandular abnormality or cervical cancer for participants aged 25–74, with 4,444 followed by histology within 6 months. Of these 4,444 histology tests, 3,108 (69.9%) had a histology result of high-grade cervical abnormality or cervical cancer.

Definition:

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

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.

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 people 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 people 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.

This performance indicator is based on primary screening tests performed in 2020. This allows 6 months to 30 June 2021 to know whether a histology test occurred, and a further 6 months to 31 December 2021 to ensure that histology data to 30 June 2021 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 2020 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 2020 there were 665,841 primary screening HPV tests performed for participants aged 25–74. Of these, 14,966 (2.2%) 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 595,259 primary screening tests that did not detect oncogenic HPV, 4,445 (0.7%) 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 4,445 histology tests performed within 6 months, 4,227 (95.1%) were negative (and thus were likely due to benign conditions unrelated to cervical screening), 141 (3.2%) were low-grade, 18 (0.4%) were high-grade, and 7 (0.2%) were cervical cancer.

There were 50,441 primary screening tests that detected an oncogenic HPV type other than 16 or 18 for which the reflex LBC result was negative or low-grade (intermediate risk of significant cervical abnormality), 1,197 (2.4%) 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 1,197 histology tests performed within 6 months, 586 (49.0%) were negative, 433 (36.2%) were low-grade, 165 (13.8%) were high-grade, and 2 (0.2%) were cervical cancer.

There were 3,224 primary screening tests that detected an oncogenic HPV type other than 16 or 18 for which the reflex LBC result was a high-grade or glandular abnormality or cervical cancer (higher risk of significant cervical abnormality), 2,497 (77.5%) of which had histology performed within 6 months. Of the 2,497 histology tests performed within 6 months, 344 (13.8%) were negative, 500 (20.0%) were low-grade, 1,613 (64.6%) were high-grade, and 34 (1.4%) were cervical cancer.

There were 12,314 primary screening tests that detected oncogenic HPV type 16 or 18 for which the reflex LBC result was negative or low-grade (higher risk of significant cervical abnormality), 4,677 (38.0%) 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 4,677 histology tests performed within 6 months, 2,144 (45.8%) were negative, 1,743 (37.3%) were low-grade, 723 (15.5%) were high-grade, and 19 (0.4%) were cervical cancer.

There were 2,487 primary screening tests that detected oncogenic HPV type 16 or 18 for which the reflex LBC result was a high-grade or glandular abnormality or cervical cancer (higher risk of significant cervical abnormality), 1,953 (78.5%) of which had histology performed within 6 months. Of the 1,953 histology tests performed within 6 months, 212 (10.9%) were negative, 276 (14.1%) were low-grade, 1,307 (66.9%) were high-grade, and 151 (7.7%) were cervical cancer.

Table 3.5.1: Histology performed within 6 months of a primary screening test, participants aged 25–74, screened in 2020

Primary screening test result			Histology result				
HPV test	LBC test	No. tests	Negative	Low-grade	High-grade	Cancer	No result
Not detected	Any	595,259	4,227	141	18	7	52
Not 16/18	Negative or low-grade	50,441	586	433	165	2	11
Not 16/18	High-grade or glandular	3,224	344	500	1,613	34	6
16/18	Negative or low-grade	12,314	2,144	1,743	723	19	48
16/18	High-grade or glandular	2,487	212	276	1,307	151	7

Note: Some screening episodes and subsequent histology tests are excluded from this table to allow a focus on key outcomes.

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

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

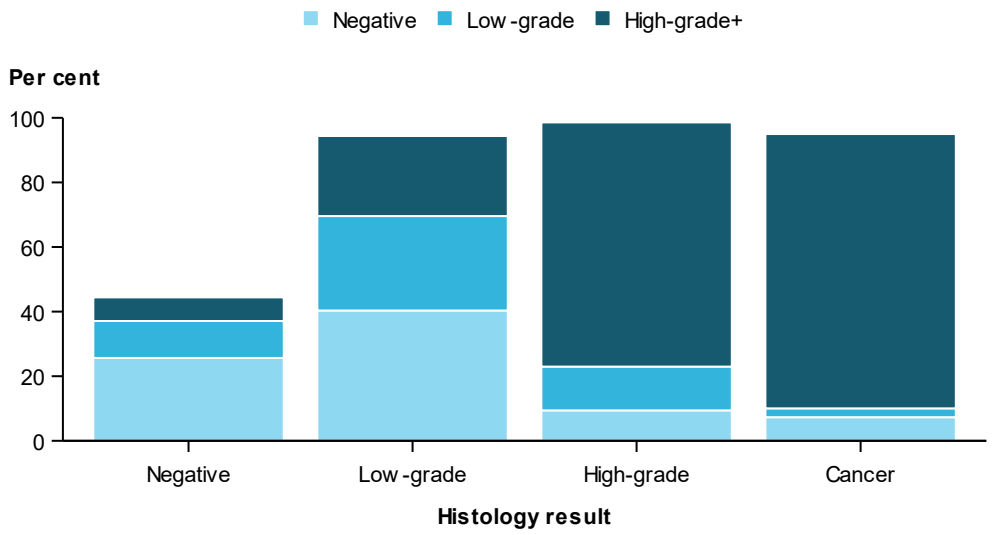
For primary screening tests performed in 2020, irrespective of HPV test result, 5,725 primary screening tests had an LBC that predicted a high-grade or glandular abnormality or cervical cancer, with 4,444 followed by histology within 6 months. Of these 4,444 histology tests, 3,108 (69.9%) had a histology 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 14,841 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 (25.7% of negative histology tests were preceded by negative LBC).
- Low-grade histology was most frequently preceded by a negative LBC test (40.3%), followed by a low-grade LBC test (29.2%) and then a high-grade+ LBC test (24.8%).
- High-grade histology was most frequently preceded by a high-grade+ LBC test (75.6% 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 (84.9% 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 2020



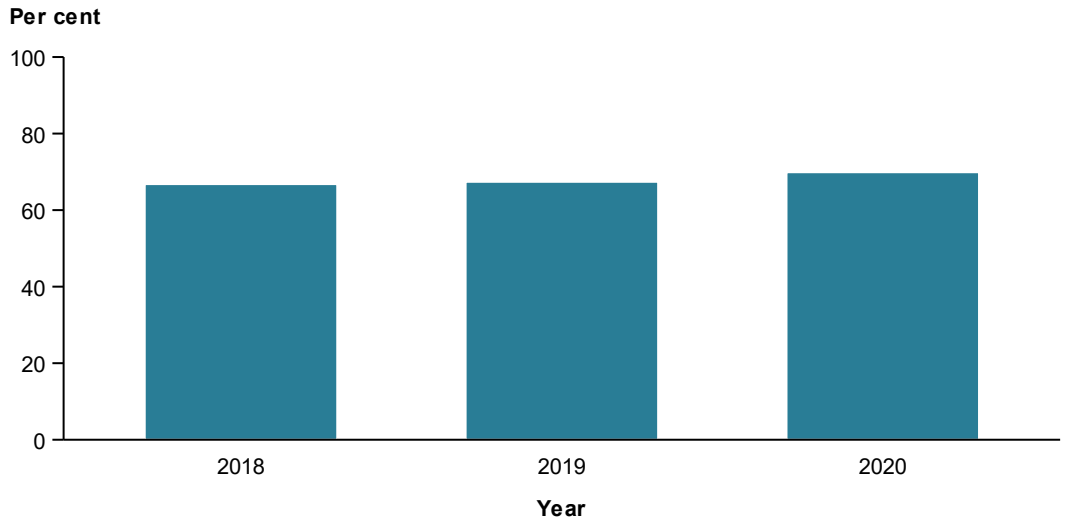
Note: Histology does not equal 100% as cases where LBC was not performed are included in calculations but excluded from this figure.

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

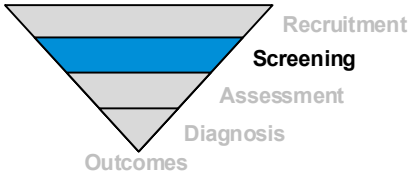
Correlation of screening results trends

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, and to 69.9% in 2020 (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 2020



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A5.2.



Performance Indicator 6: Screening HPV test positivity

Summary of screening HPV test positivity data

Of the 501,281 valid primary screening HPV tests performed in 2021 in participants aged 25–74:

- 2.3% were positive for oncogenic HPV type 16 or 18
- 8.8% were positive for oncogenic HPV types other than 16 or 18

Definition:

The percentage of screening HPV tests that are positive for HPV in a calendar year in people aged 25–74.

Rationale:

Monitoring the positivity rate provides important information about a screening test. There are three measures of positivity for the NCSP: 'any oncogenic HPV positivity' (proportion of HPV tests positive for any oncogenic HPV type), 'oncogenic HPV 16/18 positivity' (proportion of HPV tests positive for oncogenic HPV type 16 or 18), and 'oncogenic HPV (not 16/18) positivity' (proportion of HPV tests positive for oncogenic HPV types other than 16 or 18).

Screening HPV test positivity is calculated only for primary screening HPV tests. Repeat screening 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 people who were offered HPV vaccination (since these people 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 people 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 people 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

There were 509,059 valid primary screening HPV tests in 2021, of which 501,281 occurred in participants in the target age group 25–74.

Screening HPV test positivity was determined for participants aged 25–74, as well as separately 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 type 16 or 18 and those that were positive for oncogenic HPV types other than 16 or 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 types 16 and 18 was low, irrespective of age, with oncogenic HPV type 16 or 18 detected in around 2% of primary screening HPV tests (2.3% in participants aged 25–74, 2.0% in participants offered HPV vaccination, and 2.6% in participants not offered HPV vaccination) (Table 3.6.1).

In contrast, screening HPV test positivity for oncogenic HPV types other than 16 or 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 12.8% of primary screening HPV tests for participants young enough to have been offered HPV vaccination and 4.7% 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, 2021

	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	2.3	8.8	11.1
Age indicates were offered HPV vaccination	2.0	12.8	14.8
Age indicates were not offered vaccination	2.6	4.7	7.3

(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 4.4 08/07/2022).

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 types other than 16 and 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 16 or 18 were included in the HPV vaccine that the majority of these participants would have received (Brotherton et al. 2019).

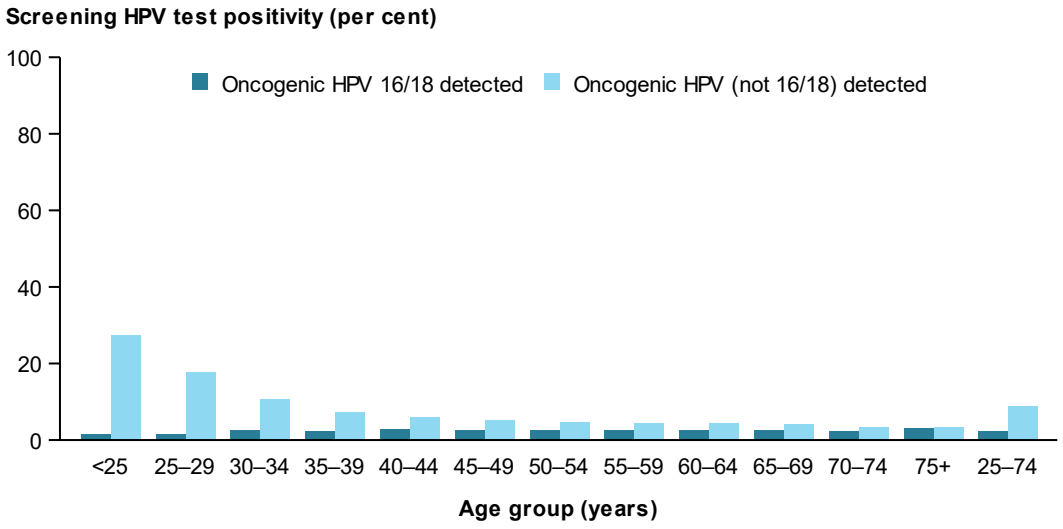
Screening HPV test positivity results by age

With age being such an important factor for this performance indicator, screening HPV test positivity was further examined by 5-year age groups. The effect of HPV vaccination on screening HPV test positivity described earlier is apparent in Figure 3.6.1.

Positivity of oncogenic HPV types other than 16 and 18 shows the more typical pattern of HPV infection before HPV vaccination was introduced, with HPV positivity of oncogenic HPV types other than 16 and 18 highest among the youngest participants and thereafter decreasing with increasing age. Positivity was 27.4% in participants aged under 25, falling to 17.6% in participants aged 25–29 and 10.6% 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 types 16 and 18 was lowest in the youngest age groups, being 1.4% and 1.5% in participants aged under 25 and 25–29, respectively. Positivity was thereafter steady at between 2.3% and 2.8% 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.

Figure 3.6.1: Screening HPV test positivity, by oncogenic HPV type, by age, 2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). 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 2021 for oncogenic HPV types 16 and 18 and oncogenic HPV types other than 16 and 18 are shown in Figure 3.6.2 separately for:

- participants aged 25–74;
- participants whose age indicates that they were offered HPV vaccination; and
- 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.

Positivity for oncogenic HPV types 16 and 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. This increase was not driven by participants who were offered HPV vaccination, for whom positivity remained steady at around 2% over these years. Rather, this increase in positivity in the target age group appears to be driven by participants who were not offered HPV vaccination, with positivity in these participants increasing from 1.9–2.0% of valid primary screening HPV tests in 2018 and 2019 to 2.4% in 2020 and 2.6% in 2021 (Figure 3.6.2).

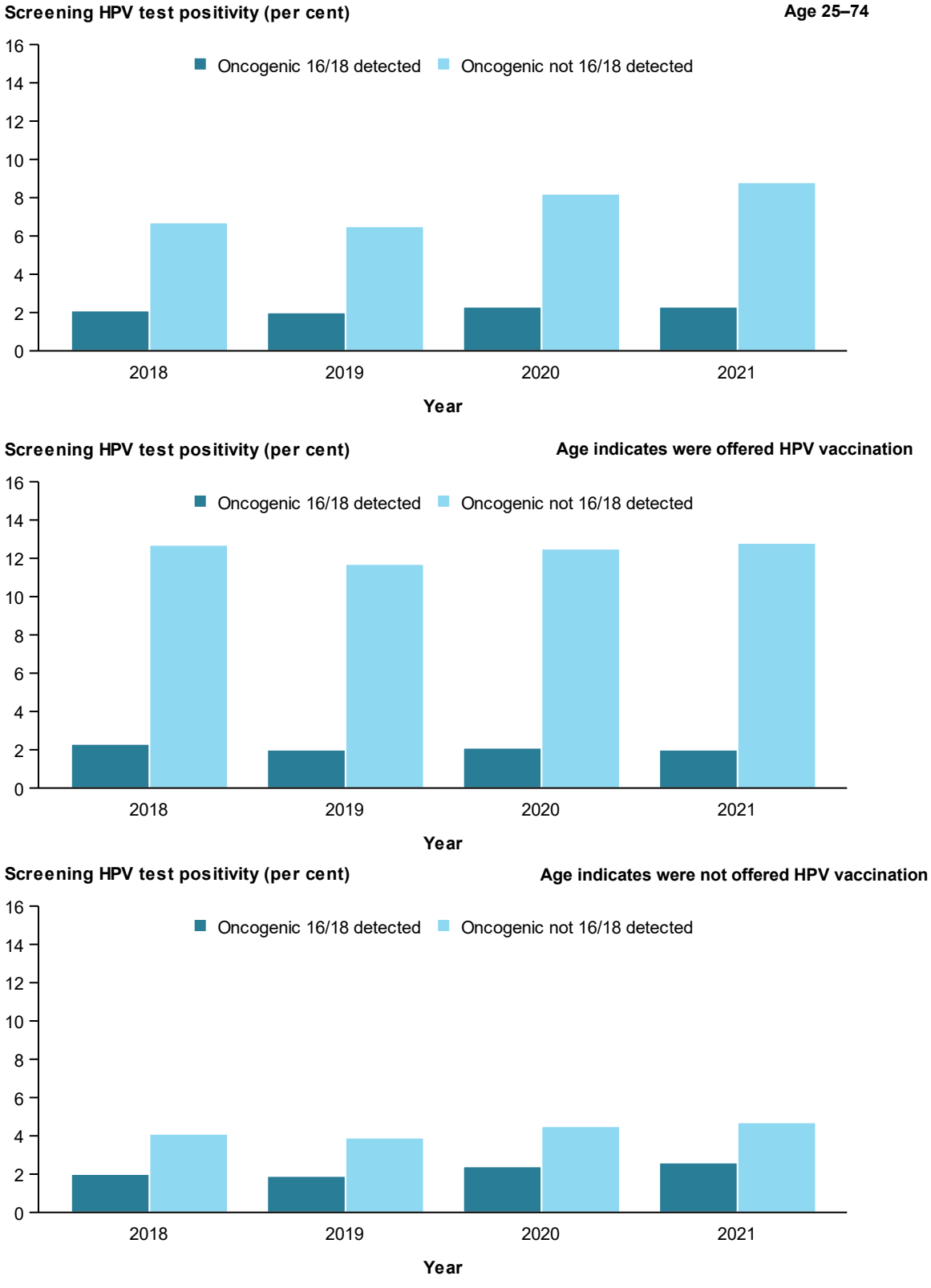
Positivity of oncogenic HPV types other than 16 and 18 for participants aged 25–74 increased from 6.5–6.7% of valid primary screening HPV tests in 2018 and 2019 to 8.2% in 2020 and 8.8% of valid primary screening HPV tests in 2021. Unlike oncogenic HPV types 16 and 18, this trend of increasing positivity over time was replicated in participants offered vaccination as well as in participants not offered vaccination. Positivity for participants offered HPV vaccination increased from 11.7% of valid primary screening HPV tests in 2019 to 12.5% in 2020 and to 12.8% in 2021. Similarly, positivity of oncogenic HPV types other than 16 and 18 for participants who were not offered HPV vaccination increased from 3.9% of valid primary screening HPV tests in 2019 to 4.5% in 2020 and 4.7% in 2021 (Figure 3.6.2).

Many factors affect positivity over time, 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.

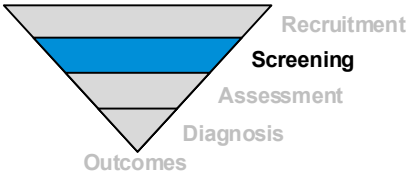
As introduced earlier in this report, the first 2 years of the renewed NCSP was a transition period during which participants who had had a Pap test under the previous NCSP became due for their first screening HPV test, after which time they moved to a 5-yearly screening interval. This means that screening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

Figure 3.6.2: Screening HPV test positivity trends, by birth cohort, by year, 2018 to 2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). 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:

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

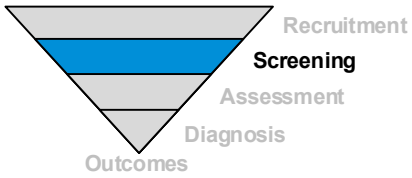
Rationale:

This measures the false negative rate of the screening HPV test.

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: Self-collection people positive for oncogenic HPV (not 16/18) who have an LBC test within 6 months

Summary data for people who have an LBC test within 6 months of a self-collected sample in which an oncogenic HPV type other than 16 or 18 is detected

In 2021, of the 327 participants aged 30–74 who self-collected and whose HPV test was positive for an oncogenic HPV type other than 16 or 18, 59.6% had an LBC test within 6 months.

Definition:

The percentage of people aged 30–74 who self-collect and test positive for oncogenic HPV (not 16/18) in a calendar year who have an LBC test within 6 months.

Rationale:

Under the renewed NCSP, prior to 1 July 2022, when all participants became eligible for self-collection, people 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 which is tested for oncogenic HPV.

As a self-collected sample is not suitable for reflex LBC, if the HPV test result is 'Oncogenic HPV (not 16/18) detected', the participant needs to have a separate sample collected for a reflex LBC test to determine whether their risk is intermediate or higher.

Participants who self-collect and test positive for an oncogenic HPV type other than 16 or 18 are recommended to have a practitioner-collected sample taken within 6–12 weeks. This indicator monitors compliance with this recommendation within 6 months, by which time it is considered most people would have been able to attend an appointment with a practitioner.

Guide to interpretation:

A higher percentage is better.

Data considerations:

In 2021, participants were eligible to self-collect only when they reached age 30, so this performance indicator is calculated for participants aged 30–74 rather than 25–74. Some may have colposcopy and/or histology in the absence of LBC which would increase the percentage followed up within 6 months. However, these tests are outside the scope of this performance indicator.

Results

In 2021, there were 327 participants aged 30–74 who self-collected a sample for their primary screening HPV test and were found to be positive for an oncogenic HPV type other than 16 or 18. Of these 327 participants, 195 (59.6%) had an LBC test within 6 months of their primary screening HPV test.

Oncogenic HPV (not 16/18) followed by LBC test within 6 months by age

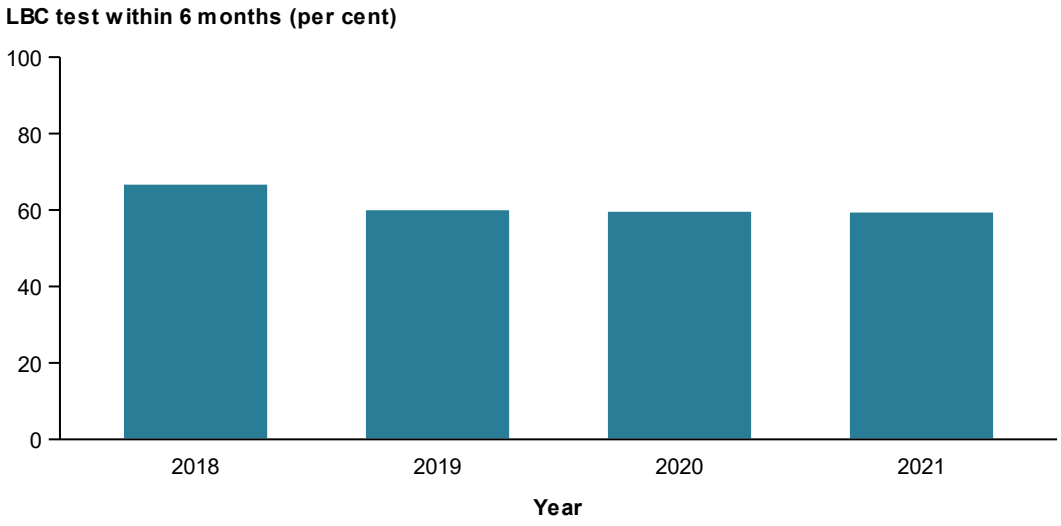
The small number of participants who self-collected their sample and were positive for oncogenic HPV types other than 16 and 18 do not support detailed breakdowns, but 10-year age groups from 30–39 to 60–69 were used to investigate if any age trends exist.

The proportion of these participants who had an LBC test within 6 months was 60.6% for participants aged 30–39, 58.5% for participants aged 40–49, 58.0% for participants aged 50–69, and highest at 65.6% for participants aged 60–69.

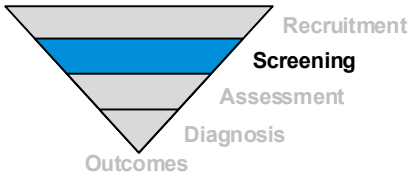
Oncogenic HPV (not 16/18) followed by LBC test within 6 months trends

The proportion of participants who self-collected their sample and were positive for oncogenic HPV types other than 16 and 18 who had an LBC test within 6 months was highest at 66.9% in 2018, and has thereafter remained steady at around 60%, being 60.2% in 2019, 59.8% in 2020, and 59.6% in 2021 (Figure 3.8.1).

Figure 3.8.1: Proportion of participants who self-collected their sample and were positive for oncogenic HPV types other than 16 and 18 who had an LBC test within 6 months, participants aged 30–74, by year, 2018 to 2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A8.1



Performance Indicator 9: Self-collection people positive for oncogenic HPV 16/18 who have a colposcopy within 6 months

Summary data for people who have a colposcopy within 6 months of a self-collected sample in which oncogenic HPV type 16 or 18 is detected

In 2021, of the 130 participants aged 30–74 who self-collected and whose HPV test was positive for oncogenic HPV type 16 or 18, 68.5% had a colposcopy within 6 months.

Definition:

The percentage of people aged 30–74 who self-collect and test positive for oncogenic HPV 16/18 in a calendar year who have a colposcopy within 6 months.

Rationale:

Under the renewed NCSP, prior to 1 July 2022, when all participants became eligible for self-collection, people 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 which is tested for oncogenic HPV.

If the HPV test result is 'Oncogenic HPV 16/18 detected' the participant is considered higher risk and referred for colposcopy.

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

Guide to interpretation:

A higher percentage is better.

Data considerations:

In 2021, participants were eligible to self-collect only when they reached age 30, so this performance indicator is calculated for participants aged 30–74 rather than 25–74. Any colposcopy or histology test performed within 6 months is included, as a histology test is an indication of a colposcopy.

This performance indicator is based on primary screening tests performed in 2021. This allows 6 months to 30 June 2022 to know whether a colposcopy or histology occurred. However, the further 6 months to 31 December 2021 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 2021 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 2021, there were 130 participants aged 30–74 who self-collected a sample for their primary screening HPV test and were found to be positive for oncogenic HPV type 16 or 18. Of these 130 participants, 89 (68.5%) had a colposcopy within 6 months of their primary screening HPV test.

Oncogenic HPV 16/18 followed by colposcopy within 6 months by age

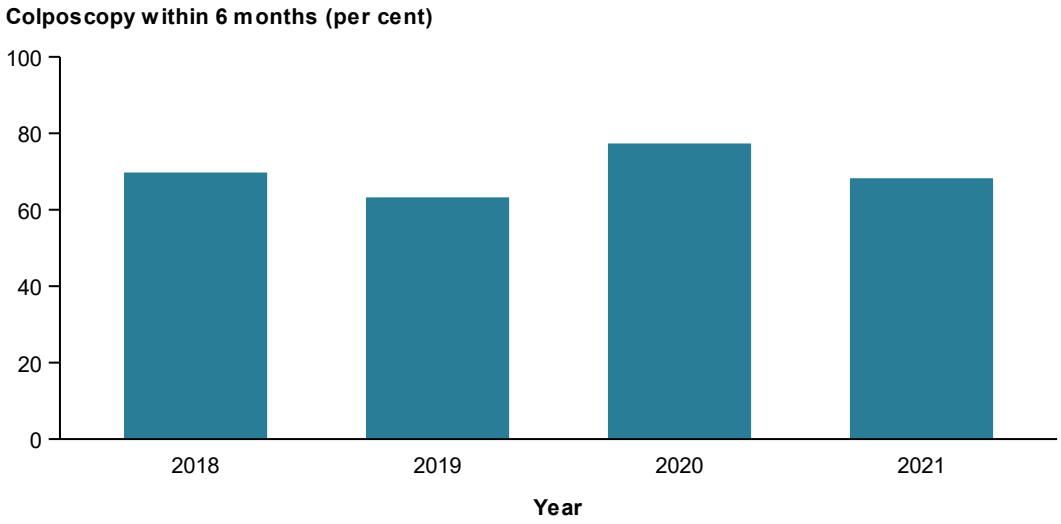
The small number of participants who self-collected their sample and were positive for oncogenic HPV type 16 or 18 do not support detailed breakdowns, but 10-year age groups from 30–39 to 60–69 were used to investigate if any age trends exist.

There was a clear age trend for this performance indicator, being higher for older age groups. The proportion of participants who self-collected their sample and were positive for oncogenic HPV type 16 or 18 who had a colposcopy within 6 months, after decreasing from 58.3% for participants aged 30–39 to 54.8% for participants aged 40–49, thereafter increased to 70.8% for participants aged 50–69, and to 80.0% for participants aged 60–69.

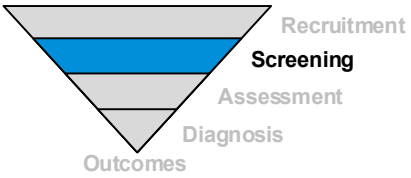
Oncogenic HPV 16/18 followed by colposcopy within 6 months trends

The proportion of participants who self-collected their sample and were positive for oncogenic HPV type 16 or 18 who had a colposcopy within 6 months has varied over the years, likely due to the very small numbers involved. The proportion of participants who had a colposcopy within 6 months was 70.0% in 2018, 63.5% in 2019, 77.6% in 2020, and 68.5% in 2021 (although as stated in the data considerations section for this performance indicator, the proportion for 2021 may be an underestimate) (Figure 3.9.1).

Figure 3.9.1: Proportion of participants who self-collected their sample and were positive for oncogenic HPV type 16 or 18 who had a colposcopy within 6 months, participants aged 30–74, by year, 2018 to 2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A9.1



Performance Indicator 10: Adherence to recommendation for follow-up

Summary adherence to recommendation for follow-up data

53.8% of participants aged 25–74 who had a primary screening test in 2020 that indicated they were of intermediate risk had a 12-month repeat HPV test between 9 and 15 months, indicating adherence with the recommendation for follow-up.

Definition:

The percentage of people aged 25–74 who are determined to be of intermediate risk as the result of a screening episode in a calendar year who have a follow-up/repeat HPV test between 9 and 15 months.

Rationale:

People 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, and are recommended to have a follow-up (repeat) HPV test in 12 months. This indicator monitors compliance with this recommendation (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 repeat HPV test 12 months after their primary screening test required to determine whether they have cleared the HPV infection and have become low risk, or the infection has persisted. Prior to February 2021, a persistent infection was considered higher risk. However, from February 2021, a persistent infection can be considered either intermediate risk or higher risk. Intermediate risk participants are then required to have a repeat HPV test in a further 12 months to determine whether they have cleared the HPV infection and have become low risk, of if the infection has continued to persist in which case they are then considered to be at higher risk.

These data are only measuring compliance with the first repeat HPV test 12 months after the primary screening test.

Calculation of this performance indicator requires 15 months to have passed after the end of the reporting period to know if participants had their 12-month repeat HPV test between 9 and 15 months after their screening episode.

This performance indicator is based on primary screening tests performed in 2020. This allows 15 months to 31 March 2022 to know whether a follow-up HPV test occurred as recommended, and a further 2 months to 31 May 2022 to ensure that screening data to 31 March 2022 are complete.

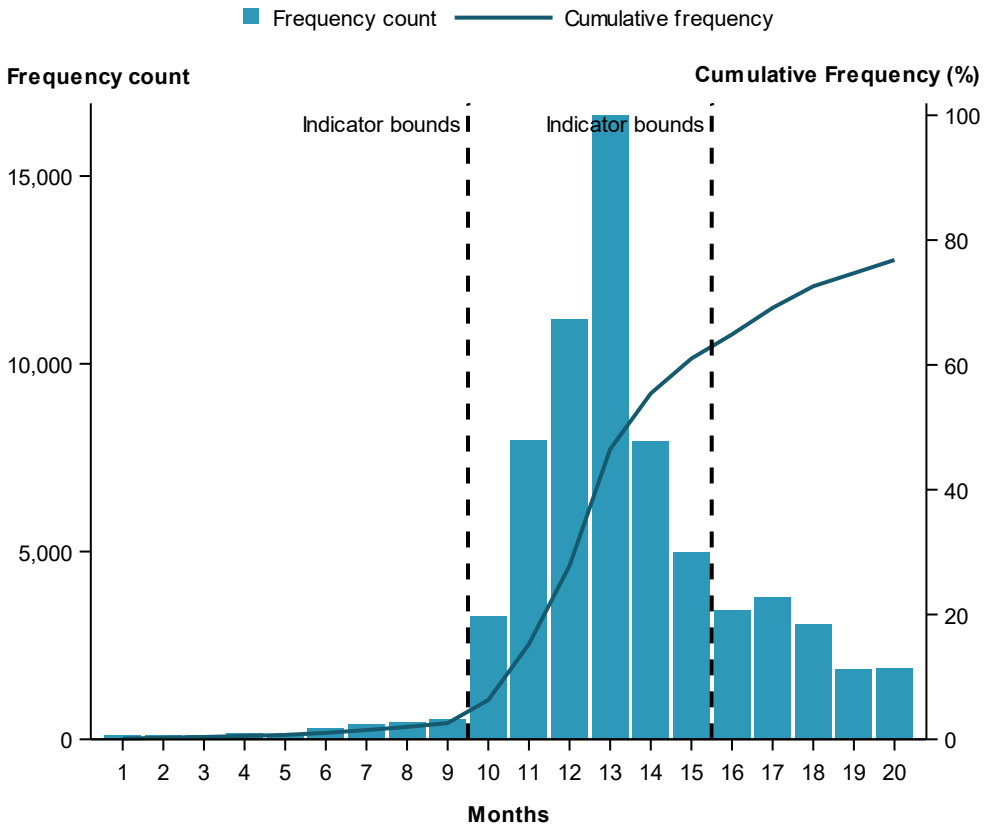
Results

There were 48,035 participants aged 25–74 who had a primary cervical screening test in 2020 that indicated they were at intermediate risk of a significant cervical abnormality.

Of these 48,035 participants, 25,847 (53.8%) had a 12-month repeat 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 repeat HPV test before or after 12 months, but still within an appropriate length of time.

Figure 3.10.1 shows the distribution of repeat HPV tests after a primary screening test of intermediate risk. Compliance with the 12-month recommendation is high, with 11.4% and 17.3% of intermediate risk participants having a repeat HPV test at 12 and 13 months, respectively. At 20 months after a primary screening test of intermediate risk, 27.4% of participants had not had a 12-month repeat HPV test (Figure 3.10.1).

Figure 3.10.1: Distribution of 12-month repeat HPV tests after an intermediate primary screening test, participants aged 25–74 screened in 2020



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A10.1.

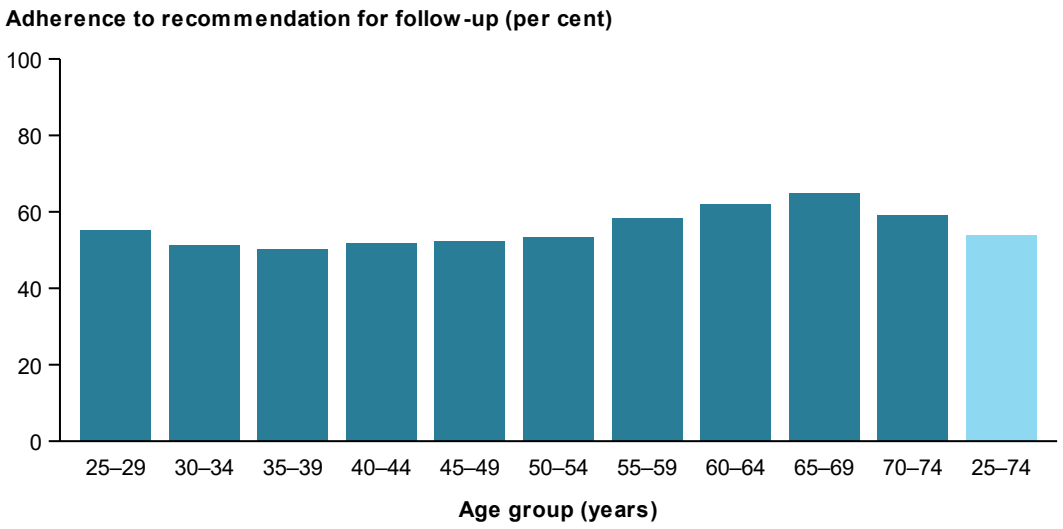
Adherence to recommendation for follow-up by age

The proportion of participants at intermediate risk who had a 12-month repeat HPV test between 9 and 15 months after their primary screening test is shown by age in Figure 3.10.2.

Adherence to recommendation for follow-up was 55.2% of participants aged 25–29, decreasing to between 50% and 53% for age groups 30–34 to 50–54. Adherence thereafter increased with increasing age, to 58.3% for participants aged 55–59, 62.1% for participants aged 60–64, and 64.9% for participants aged 65–69 (Figure 3.10.2).

Adherence to recommendation for follow-up for participants aged 70–74 was lower at 59.2%, likely a reflection of this age group entering the target age group for cervical screening under the renewed NCSP from 1 December 2017.

Figure 3.10.2: Adherence to recommendation for follow-up, by age, participants screened in 2020

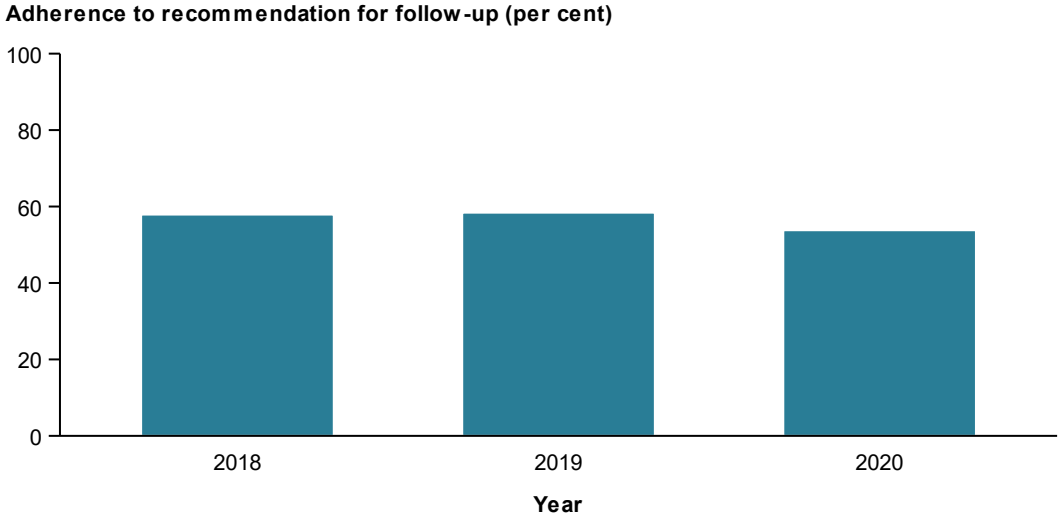


Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A10.2.

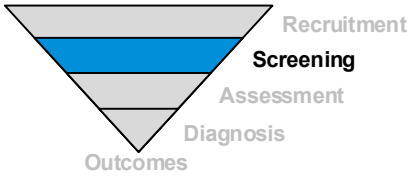
Adherence to recommendation for follow-up by trends

The proportion of participants at intermediate risk who had a 12-month repeat HPV test between 9 and 15 months after their primary screening test was above 50% for all years between 2018 and 2020, being 57.9% in 2018, 58.4% in 2019 and 53.8% in 2020 (Figure 3.10.3).

Figure 3.10.3: Adherence to recommendation for follow-up, by year, participants aged 25–74, 2018 to 2020



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A10.4.



Performance Indicator 11: Follow-up results

Summary follow-up results data

Of the 127,839 repeat screening episodes in 2021 in participants aged 25–74:

- 42.8% were low risk
- 43.2% were intermediate risk
- 13.2% were higher risk
- 0.8% could not be assigned a risk

Definition:

The percentage of repeat screening episodes in each risk category in a calendar year in people aged 25–74.

Rationale:

Follow-up results are the repeat screening HPV test result and, where indicated, the reflex LBC test result that occur around 12 months after an intermediate risk screening episode result. Distribution of repeat 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.

Data considerations:

Prior to 1 February 2021, only one 12-month repeat screening HPV test was performed following an intermediate risk primary screening episode, and this episode was deemed to be either low risk (no oncogenic HPV types detected) or higher risk (any oncogenic HPV types detected). Since 1 February 2021, if oncogenic HPV types other than 16 and 18 are detected and the reflex LBC is negative or low-grade, then the 12-month repeat screening episode remains at intermediate risk, and a second repeat screening HPV test is performed 12 months after the first, that is deemed to be either low risk (no oncogenic HPV types detected) or higher risk (any oncogenic HPV types detected).

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

However, this indicator looks only at the risk of the repeat screening episode based on the 12-month repeat 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 number of intermediate risk repeat screening episodes where the participant will instead be managed as higher risk due to their age, screening history, or Indigenous status.

As this change occurred on 1 February 2021, only the risk of the first 12-month repeat screening episode is considered in these data. Future reports will include a breakdown of the risk of both first and second 12-month repeat screening HPV tests. Further, to facilitate future comparisons, repeat screening episodes from 1 January to 31 January 2021 have been allocated risk in the same way as episodes from 1 February to 31 December 2021.

Guide to interpretation:

From 1 February 2021, there are three risk categories (low, intermediate and higher) for the first repeat screening test 12 months after an intermediate risk primary screening episode that are determined by a combination of the 12-month repeat 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 repeat screening HPV test that does not detect oncogenic HPV indicates low risk, and no reflex LBC is performed.
- A first repeat screening HPV test that detects oncogenic HPV type 16 or 18 indicates higher risk, and while reflex LBC is performed, the outcome of this test does not affect the risk.
- A first repeat screening HPV test that detects an oncogenic HPV type other than 16 or 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 repeat 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 repeat screening 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 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.

Results

In 2021, there were 135,986 repeat screening episodes, 127,839 of which 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 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 127,839 repeat screening episodes in 2021 in participants aged 25–74:

- 54,779 (42.8%) were low risk
- 55,195 (43.2%) were intermediate risk
- 16,899 (13.2%) were higher risk
- 966 (0.8%) could not be assigned a risk.

Repeat screening episode results

In Table 3.11.1, the combination of repeat screening HPV test result and LBC test result is shown for each repeat screening episode.

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

As outlined in the 'Data considerations' section, allocation of risk in this table does not take into account the risk categories in January 2021 (during which there was no intermediate risk) or 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 repeat screening episode based on the 12-month repeat 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. Repeat screening episodes for which a risk could not be assigned have no shading.

Table 3.11.1: Repeat screening HPV ± LBC test results, participants aged 25–74, 2021

	Primary screening 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*	89	50,720	10	2
LBC Unsatisfactory	9	100	750	228
LBC Negative	1	4,059	34,787	7,655
LBC Squamous low-grade abnormality	7	596	19,812	3,418
LBC Squamous high-grade abnormality or squamous cell carcinoma	2	29	3,986	1,335
LBC Glandular abnormality or adenocarcinoma	0	3	109	132

* 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 HPV test and LBC test result only. There will be some participants with an intermediate risk repeat screening episode result that will be managed as higher risk due to their age, screening history, or Indigenous status.
2. Some repeat 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. 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 repeat screening episode is intermediate risk or higher risk.

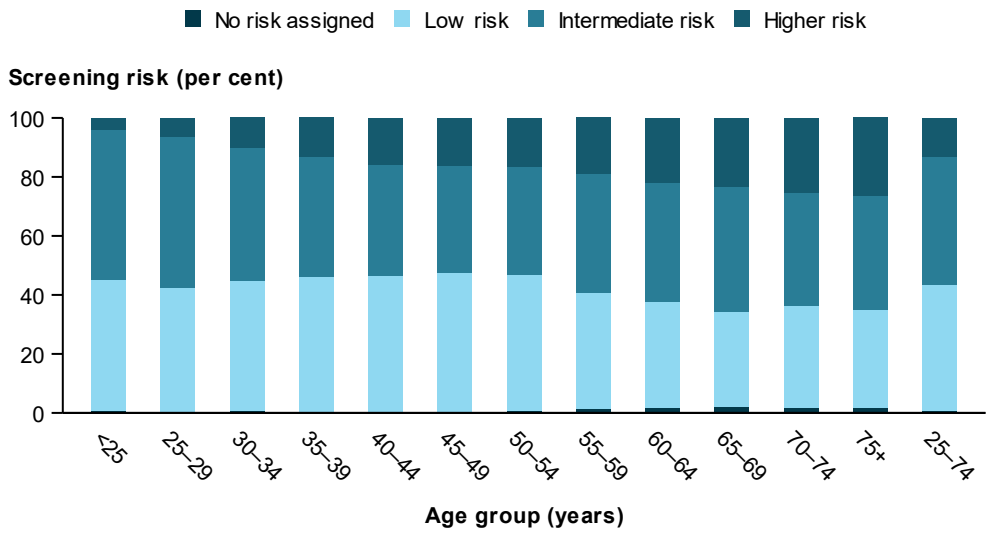
Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Repeat screening episode risk by age

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

The proportion of repeat screening episodes that were low risk was highest for ages 30–34 to 50–54, decreasing after this age. The proportion of repeat screening episodes that were intermediate risk was highest in younger age groups, and was lowest for participants aged 40–44 to 50–54. The proportion of repeat screening episodes that were higher risk was very low in participants aged under 25 and 25–29, thereafter increasing with increasing age (Figure 3.11.1).

Figure 3.11.1: Repeat screening episode risk categories, by age, 2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A11.1.

Repeat screening episode risk trends

Due to the change in allocation of risk for repeat screening episodes from 1 February 2021 (see Box 3.11.1), no trends are reported for this performance indicator.

Box 3.11.1: Change in allocation of risk for repeat screening tests

Prior to 1 February 2021

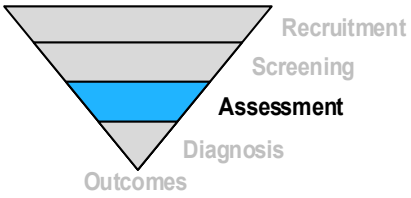
There was only one 12-month repeat screening HPV test, and there were two possible risk categories (low and higher) for a repeat screening test that were determined by the HPV test result. The LBC test result did not affect risk, but was still performed where indicated.

From 1 February 2021

There can be a first and a second 12-month repeat screening HPV test.

For the first 12-month repeat screening HPV test, there are three possible risk categories (low, intermediate and higher) determined by the HPV test result and reflex LBC test result.

If the first 12-month repeat screening episode is intermediate risk, then a second 12-month month repeat screening HPV test is performed, 12 months after the first. For the second 12-mont repeat screening HPV tests, there are two possible risk categories (low and higher) determined by the HPV test result. The LBC test result does not affect risk, but is still performed where indicated.



Assessment

Performance Indicator 12: Colposcopy rate

Summary colposcopy rate data

Of the participants aged 25–74 who were referred for colposcopy in 2020, 54.6% had a colposcopy within 3 months.

Definition:

The percentage of people aged 25–74 who are referred for colposcopy who attend colposcopy within 3 months.

Rationale:

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

The collection of national colposcopy data under the NCSP is relatively new. Being new, the level of completeness of colposcopy data in the NCSR is not known. This is important to flag since incomplete colposcopy data would affect all performance indicators that rely on these.

Time to colposcopy is taken from the date of a participant's first higher risk screening episode. However, if a participant had a second higher risk screening episode, they may not have been referred to colposcopy until this later result was received. Therefore in some cases the data may show a longer time to colposcopy than occurred due to a later test and delayed referral.

Guide to interpretation:

A higher colposcopy rate is better.

This performance indicator is based on primary screening episodes performed in 2020. This allows 3 months to 31 March 2021 to know whether a colposcopy occurred, and a further 6 months to 30 September 2021 to ensure that colposcopy data to 31 March 2021 are complete

Results

Participants whose primary screening episode or repeat screening episode indicates that they are at higher risk of significant cervical abnormality are referred for colposcopy.

In 2020, there were three groups of participants aged 25–74 who, as a result of their screening episode result, were considered at higher risk and therefore referred for colposcopy. These were:

- participants whose primary screening test detected oncogenic HPV type 16 or 18;
- participants whose primary screening test detected an oncogenic HPV type other than 16 or 18 and whose reflex LBC test result was a high-grade squamous abnormality, squamous cell carcinoma, or a glandular abnormality; and
- participants whose repeat screening test detected any oncogenic HPV type.

The colposcopy rate of these three 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 test result, participants aged 25–74, 2020

Screening test result	Number at higher risk	Number of colposcopies	Colposcopy rate (%)
Primary screening test HPV 16/18	15,091	9,446	62.6
Primary screening test (not 16/18) + any high-grade/glandular LBC	3,221	2,490	77.3
Repeat screening test HPV (any)	77,770	40,528	52.1
Total	**96,082**	**52,464**	**54.6**

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Participants whose primary screening test detected an oncogenic HPV type other than 16 or 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 77.3% of these participants having a colposcopy within 3 months. This was followed by participants whose primary screening test detected oncogenic HPV type 16 or 18, of whom 62.6% had a colposcopy within 3 months. The lowest colposcopy rate was for participants whose repeat screening test detected any oncogenic HPV type, at 52.1%.

The total colposcopy rate for all participants referred for colposcopy combined was 54.6%.

Colposcopy rate by age

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

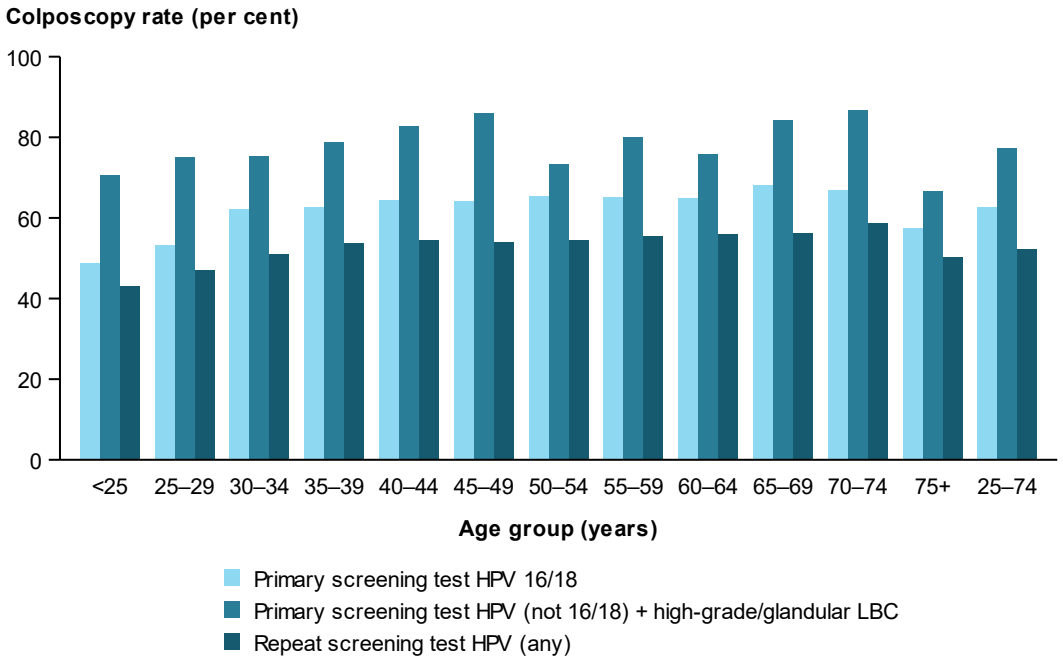
The colposcopy rate was lower for younger age groups, thereafter increasing with increasing age, for all three groups of participants referred for colposcopy.

The colposcopy rate was only around 50% for participants aged under 25 and 25–29 whose primary screening test detected oncogenic HPV type 16 or 18, thereafter increasing from 62.3% for participants aged 30–34 to 68.0% for participants aged 65–69.

The colposcopy rate for participants whose primary screening test detected an oncogenic HPV type other than 16 or 18 and whose reflex LBC test result was a high-grade squamous abnormality, squamous cell carcinoma, or a glandular abnormality varied a little within this overall trend, but was lowest for participants aged under 25 at 70.6% and highest for participants aged 70–74 at 86.7%.

The colposcopy rate for participants whose repeat screening test detected any oncogenic HPV type increased from 43.1% for participants aged under 25 to 58.8% for participants aged 70–74.

Figure 3.12.1: Colposcopy rate, by screening test result, by age, 2020

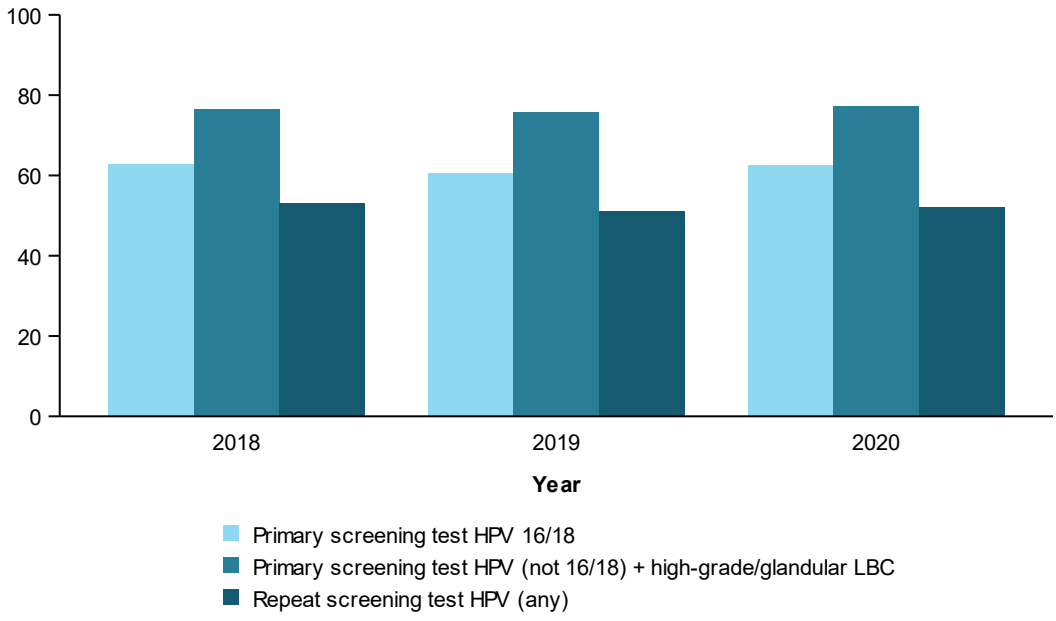


Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A12.1.

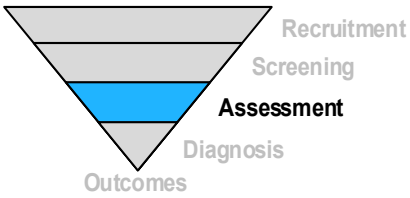
Colposcopy rate trends

The colposcopy rate has remained similar across the years 2018 to 2020 for all three groups of participants referred for colposcopy, at 61–63% for participants whose primary screening test detected oncogenic HPV type 16 or 18, at 76–77% for participants whose primary screening test detected an oncogenic HPV type other than 16 or 18, and at 51–53% for participants whose repeat screening test detected any oncogenic HPV type (Figure 3.12.2).

Figure 3.12.2: Colposcopy rate, by year, participants aged 25–74, 2018 to 2020



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A12.3.



Performance Indicator 13: Time to colposcopy

Summary time to colposcopy data

For participants aged 25–74 who were referred for colposcopy in 2020, the median time to colposcopy was 62 days.

Definition:

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

Rationale:

People who receive a screening episode result that places them at higher risk of a significant cervical abnormality will be referred to colposcopy. The recommended timeframe in which they should undergo colposcopic assessment is as per the NCSP 2016 Guidelines (Cancer Council Australia & Cervical Cancer Screening Guidelines Working Party 2016). Monitoring actual time between screening result and colposcopy provides important information as to whether people 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.

The collection of national colposcopy data under the NCSP is relatively new. Being new, the level of completeness of colposcopy data in the NCSR is not known. This is important to flag since incomplete colposcopy data would affect all performance indicators that rely on these.

Time to colposcopy is taken from the date of a participant's first higher risk screening episode. However, if a participant had a second higher risk screening episode, they may not have been referred to colposcopy until this later result was received. Therefore in some cases the data may show a longer time to colposcopy than occurred due to a later test and delayed referral.

Guide to interpretation:

A shorter time to colposcopy is better.

This performance indicator is based on primary screening tests performed in 2020. This allows 12 months to 31 December 2021 to calculate time to colposcopy, and a further 6 months to 30 June 2022 to ensure that colposcopy data to 31 December 2021 are complete.

Results

Time to colposcopy was calculated for the same three groups of participants aged 25–74 for whom a colposcopy rate was calculated. These were:

- participants whose primary screening test detected oncogenic HPV type 16 or 18;
- participants whose primary screening test detected an oncogenic HPV type other than 16 or 18 and whose reflex LBC test result was a high-grade squamous abnormality, squamous cell carcinoma, or a glandular abnormality; and
- participants whose repeat screening test detected any oncogenic HPV type.

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 type 16 or 18, 44 days for participants whose primary screening test detected an oncogenic HPV type other than 16 or 18 and whose LBC test result was a high-grade squamous or any glandular abnormality, and 65 days for participants whose repeat screening test detected any oncogenic HPV type.

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 test result, participants aged 25–74, 2020

Screening test result	Median	90th percentile
Primary screening test HPV 16/18	57	227
Primary screening test (not 16/18) + any high-grade/glandular LBC	44	138
Repeat screening test HPV (any)	65	363
Total	**62**	**325**

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

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

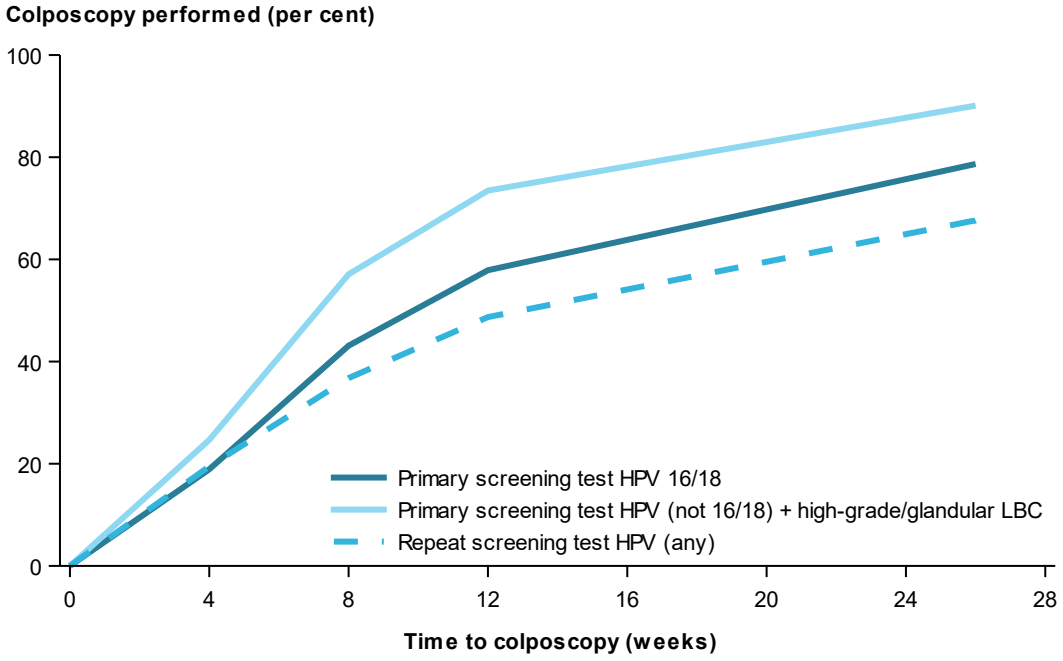
Time to colposcopy was also calculated as the proportion of participants who had a colposcopy within 4 weeks, 8 weeks, 12 weeks, and 26 weeks (Figure 3.13.1).

At 26 weeks after their screening test:

- 78.8% of participants whose primary screening test detected oncogenic HPV type 16 or 18 had a colposcopy
- 88.5% of participants whose primary screening test detected an oncogenic HPV type other than 16 or 18 and whose reflex LBC test result was a high-grade squamous abnormality, squamous cell carcinoma, or a glandular abnormality had a colposcopy
- 66.5% of participants whose repeat screening test detected an oncogenic HPV type had a colposcopy

Overall, 69.2% of participants aged 25–74 whose screening test result in 2020 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 test result, participants aged 25–74, 2020



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure available in Table A13.1.

Time to colposcopy by age

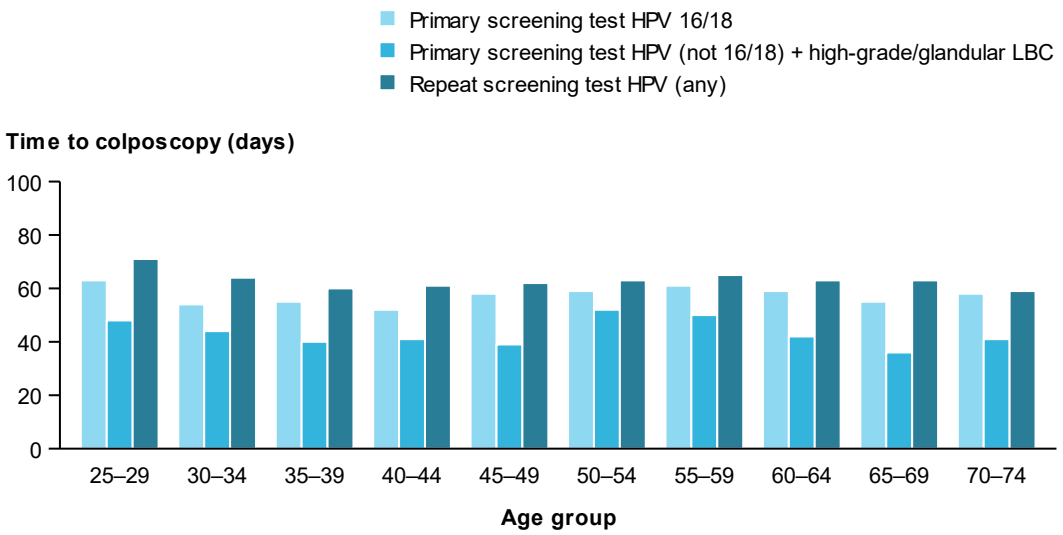
The median number of days to colposcopy is shown by age for each of the three groups of participants referred for colposcopy in Figure 3.13.2.

Median number of days to colposcopy was highest for the age group 25–29 for participants whose primary screening test detected oncogenic HPV type 16 or 18 at 63 days, and participants whose repeat screening test detected an oncogenic HPV type at 71 days.

Median number of days to colposcopy was highest for the age group 50–54 for participants whose primary screening test detected an oncogenic HPV type other than 16 or 18 and whose reflex LBC test result was a high-grade squamous abnormality, squamous cell carcinoma, or a glandular abnormality at 52 days.

Median number of days to colposcopy was lowest at 52 days for the age group 40–44 for participants whose primary screening test detected oncogenic HPV type 16 or 18, lowest at 36 days for the age group 65–69 for participants whose primary screening test detected an oncogenic HPV type other than 16 or 18 and whose reflex LBC test result was a high-grade squamous abnormality, squamous cell carcinoma, or a glandular abnormality, and lowest at 59 days for the age group 70–74 for participants whose repeat screening test detected an oncogenic HPV type (Figure 3.12.2).

Figure 3.13.2: Time to colposcopy, by screening test result, by age, 2020



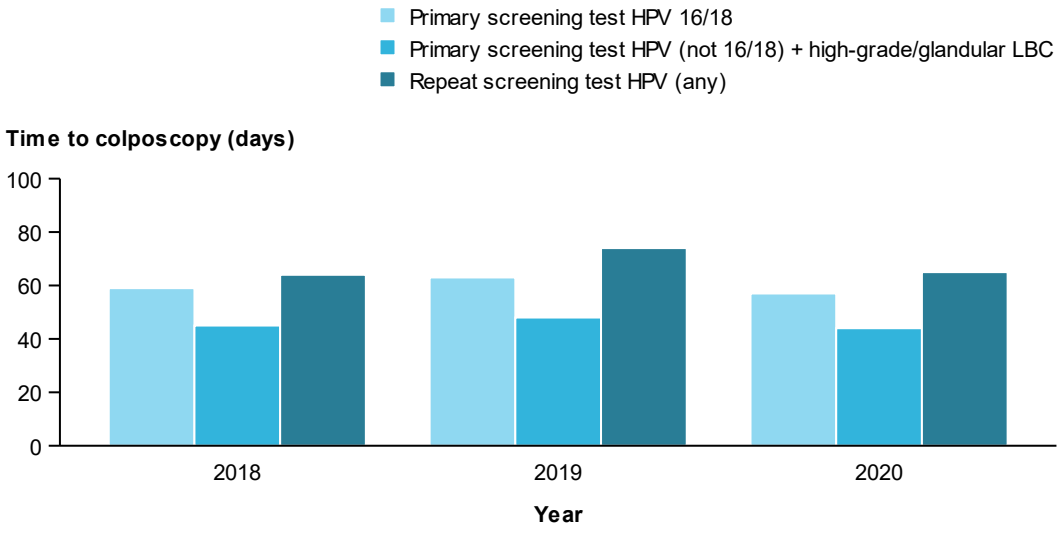
Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure available in Table A13.2.

Time to colposcopy trends

The median time to colposcopy increased between 2018 and 2019, likely due to higher volumes of colposcopies following the introduction of the renewed NCSP, leading to longer wait times. Median time to colposcopy then fell between 2019 and 2020 for each of the three groups of participants referred for colposcopy, with a similar number of days in 2018 and 2020 for all three groups (Figure 3.13.3).

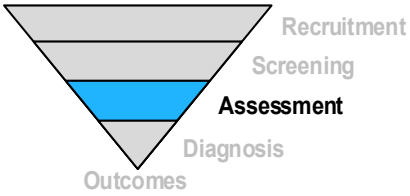
The largest difference across years was seen in participants whose repeat screening test detected any oncogenic HPV type, with median time to colposcopy increasing from 64 days in 2018 to 74 days in 2019, before falling to 65 days in 2020 (Figure 3.13.3).

Figure 3.13.3: Time to colposcopy, by screening test result, by year, 2018 to 2020



Note: Time to colposcopy is median number of days.

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure available in Table A13.4.



Performance Indicator 14: Biopsy rate

Summary biopsy rate data

A biopsy was performed in 39.1% of the colposcopies performed for participants aged 25–74 in 2021

Definition:

The percentage of colposcopies in people aged 25–74 in which a biopsy was performed.

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:

The collection of national colposcopy data under the NCSP is relatively new. Being new, the level of completeness of colposcopy data in the NCSR is not known. This is important to flag since incomplete colposcopy data would affect all performance indicators that rely on these.

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.

Results

In 2021, there were 104,088 colposcopies performed for participants aged 25–74 as indicated by a completed colposcopy form. A biopsy was performed at 40,648 (39.1%) 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 49.7%, followed by an indication for colposcopy of ‘Abnormal appearance of cervix’ at 43.3% (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 84.6% for LSIL (squamous low-grade abnormality), 70.1% for HSIL (squamous high-grade abnormality), 64.7% for a glandular abnormality, and 74.8% for cancer (Table 3.14.2).

Table 3.14.1: Biopsy rate, by indication for colposcopy, participants aged 25–74, 2021

Indication for colposcopy	Number	Biopsy rate (%)
Not performed	12	11.0
New patient with abnormal cervical screening result	24,107	49.7
Follow-up of patient with previous abnormal cervical screening result	10,602	33.0
Symptomatic	2,955	35.3
Abnormal appearance of cervix	806	43.3
At time of treatment	895	18.3
Other	638	15.0
Missing	633	15.9
Total	**40,648**	**39.1**

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 4.4 08/07/2022).

Table 3.14.2: Biopsy rate, by colposcopy impression, participants aged 25–74, 2021

Colposcopy impression	Number	Biopsy rate (%)
Normal	3,453	10.5
No Visible Lesion	2,514	12.9
LSIL	21,997	84.6
HSIL	8,557	70.1
Glandular Abnormality (adenocarcinoma in situ)	150	64.7
Cancer	151	74.8
Other	2,901	51.2
Missing	925	12.5
Total	**40,648**	**39.1**

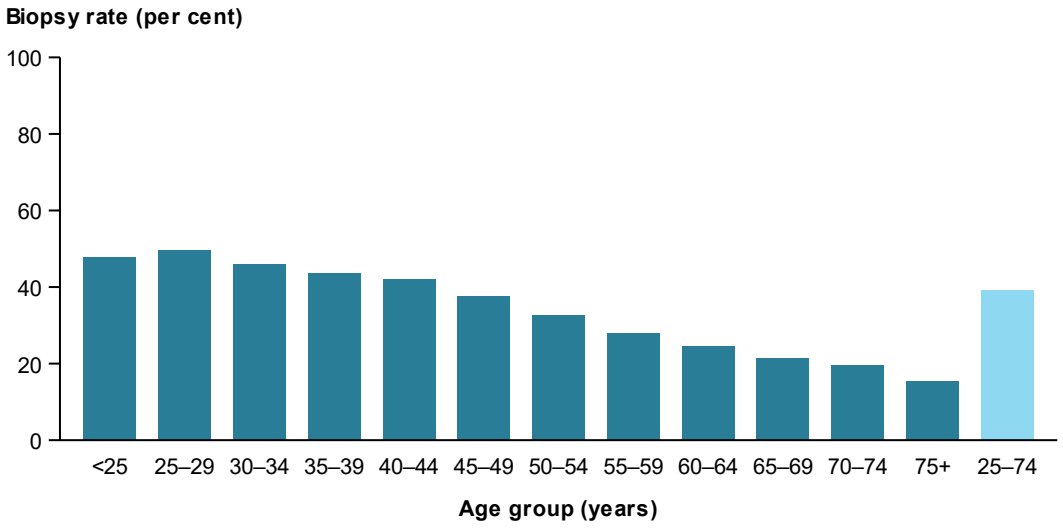
Note: LSIL = low-grade squamous intraepithelial lesion (low-grade abnormality); HSIL = high-grade intraepithelial lesion (high-grade abnormality)

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

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, 2021

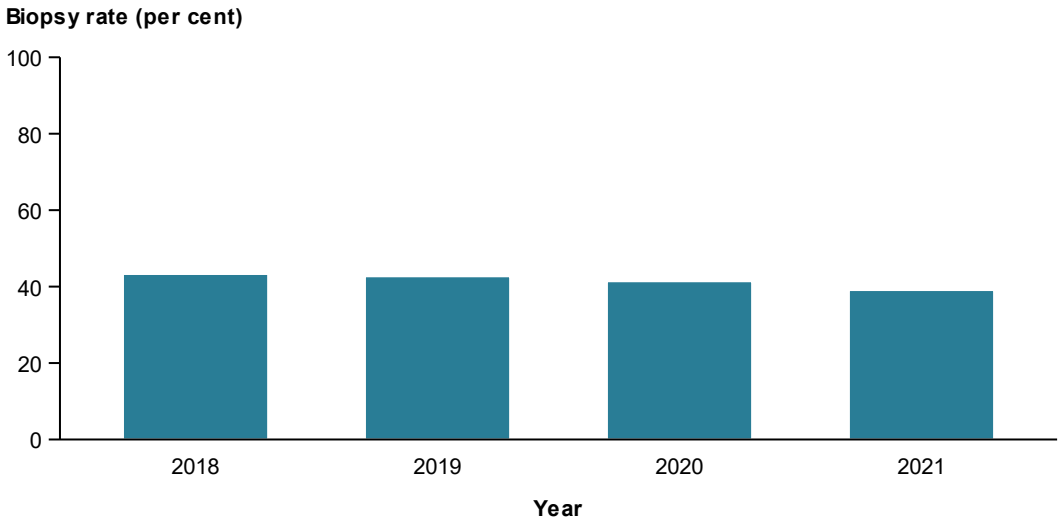


Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A14.1.

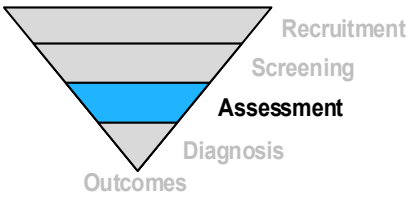
Biopsy rate trends

The proportion of colposcopies at which a biopsy was performed has decreased over time, from 43.3% in 2018, to 42.7% in 2019, to 41.4% in 2020, and 39.1% in 2021 (Figure 3.14.2).

Figure 3.14.2: Biopsy rate, by year, participants aged 25–74, 2018 to 2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A14.3.



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

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

Of the participants aged 25–74 who had a colposcopy in 2020 following a higher risk screening test, 16.9% had a high-grade abnormality or cervical cancer detected on histology within 6 months of the colposcopy.

Definition:

Percentage of people aged 25–74 with a higher risk screening 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 people who are referred to colposcopy are at higher risk of a 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:

The collection of national colposcopy data under the NCSP is relatively new. Being new, the level of completeness of colposcopy data in the NCSR is not known. This is important to flag since incomplete colposcopy data would affect all performance indicators that rely on these.

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 people who attend colposcopy after higher risk screening results is calculated using only colposcopies for which the source of data is a colposcopy form.

This performance indicator is based on colposcopies performed in 2020. This allows 6 months to 30 June 2021 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 2021 to ensure that histology data to 30 June 2021 are complete.

Results

The yield of high-grade abnormalities on biopsy includes all colposcopies performed after a higher risk screening test. Of the participants aged 25–74 who had a colposcopy in 2020 following a higher risk screening test, 16.9% 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 test that preceded the colposcopy – highest for primary screening tests that detected an oncogenic HPV type other than 16 or 18 with an LBC that detected a high-grade abnormality or cervical cancer or a glandular abnormality at 59.0%, and lower for primary screening tests that detected HPV type 16 or 18 at 20.0% and repeat screening tests that detected any type of oncogenic HPV at 13.2% (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 test result, participants aged 25–74, 2020

Screening test result	Number	Yield (%)
Primary screening test HPV 16/18	2,840	20.0
Primary screening test (not 16/18) + any high-grade/glandular LBC	2,008	59.0
Repeat screening test HPV (any)	6,768	13.2
Total	**11,616**	**16.9**

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

These results demonstrate that the LBC test result when an oncogenic HPV type is detected is likely to affect the yield. This is shown in Table 3.15.2, with the yield for each squamous and endocervical LBC result from the higher risk screening tests that preceded the colposcopy shown. Yield was found to increase with increasing severity of abnormality, and was highest at 81.4% for LBC results of squamous cell carcinoma, and 82.1% 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, 2020

LBC test result	Number	Yield (%)
S1	2,119	5.9
S2	1,056	10.8
S3	1,478	13.8
S4	3,305	48.9
S5	3,451	72.5
S6 or S7	140	81.4
E2	90	40.0
E3	106	75.2
E4, E5 or E6	124	82.1

S1 = negative; 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 squamous intraepithelial lesion with possible invasion; S7 = squamous cell carcinoma; E2 = atypical endocervical cells of uncertain significance; E3 = possible high-grade endocervical glandular lesion; E4 = adenocarcinoma in situ; E5 = adenocarcinoma in situ with possible invasion; E6 = adenocarcinoma

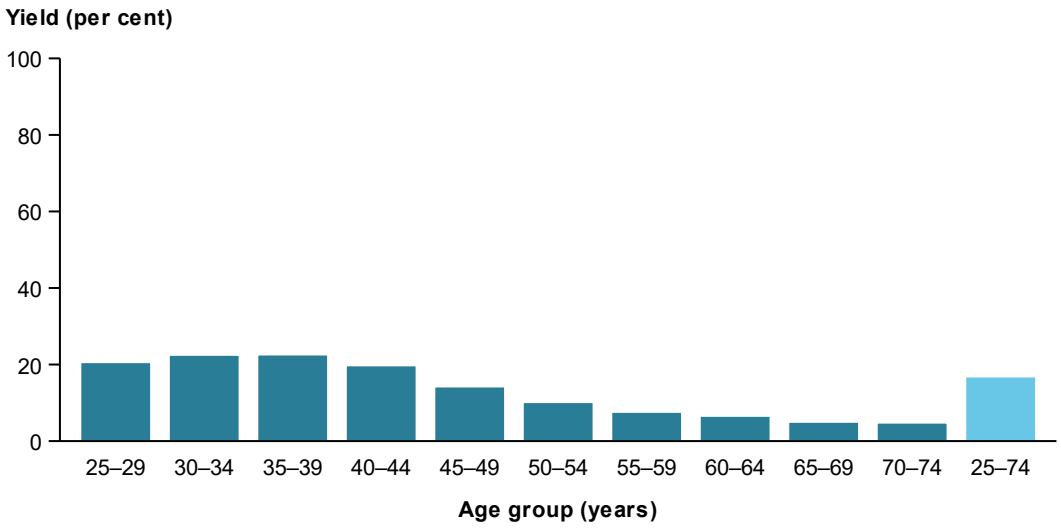
Note: this table includes each squamous and endocervical result in isolation, not as a pair, so where there is a high-grade abnormality or cervical cancer within 6 months of a negative squamous result, there may have been a glandular abnormality in the endocervical result.

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

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 20% for younger participants, dropping to below 20% for participants aged 40 and over.

Figure 3.15.1: Yield of high-grade abnormalities on biopsy among participants who attend colposcopy after higher risk screening results, by age, 2020

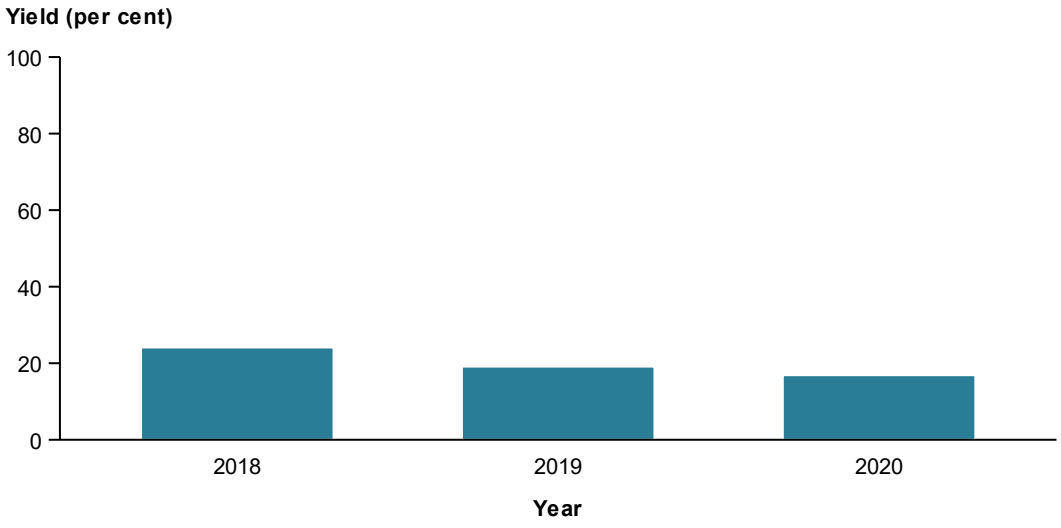


Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A15.1.

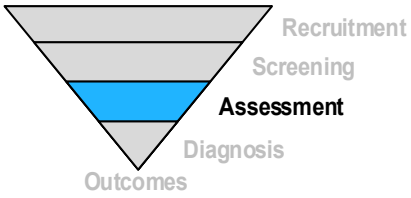
Yield of high-grade abnormalities trends

The yield of high-grade abnormalities on biopsy among participants who attend colposcopy after higher risk screening results decreased from 24.1% in 2018, to 19.1% in 2019, and to 16.9% in 2020 (Figure 3.15.2).

Figure 3.15.2: Yield of high-grade abnormalities on biopsy among participants who attend colposcopy after higher risk screening results, by year, 2018 to 2020



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A15.2.



Performance Indicator 16: Positive predictive value of colposcopy

Summary positive predictive value of colposcopy data

The positive predictive value of colposcopies performed in 2020 for participants aged 25–74 was 63.3%.

Definition:

Percentage of people aged 25–74 with a higher risk screening result who had a colposcopic impression of high-grade abnormality or cervical 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:

The collection of national colposcopy data under the NCSP is relatively new. Being new, the level of completeness of colposcopy data in the NCSR is not known. This is important to flag since incomplete colposcopy data would affect all performance indicators that rely on these.

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.

This performance indicator is based on colposcopies performed in 2020. This allows 6 months to 30 June 2021 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 2021 to ensure that histology data to 30 June 2021 are complete.

Results

The positive predictive value of colposcopy includes all colposcopies performed after a higher risk screening test with a colposcopic impression of high-grade abnormality or cervical cancer. Of the participants aged 25–74 who had a colposcopy in 2020 with a colposcopic impression of high-grade abnormality or cervical cancer following a higher risk screening test, 63.3% 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 test that preceded the colposcopy – highest for primary screening tests that detected an oncogenic HPV type other than 16 or 18 with an LBC that detected a high-grade abnormality or cervical cancer or a glandular abnormality at 74.2%, and lower for primary screening tests that detected HPV type 16 or 18 at 67.1%. The positive predictive value was lowest for repeat screening tests that detected any type of oncogenic HPV at 57.3% (Table 3.16.1).

Table 3.16.1: Positive predictive value of colposcopy, by screening test result, participants aged 25–74, 2020

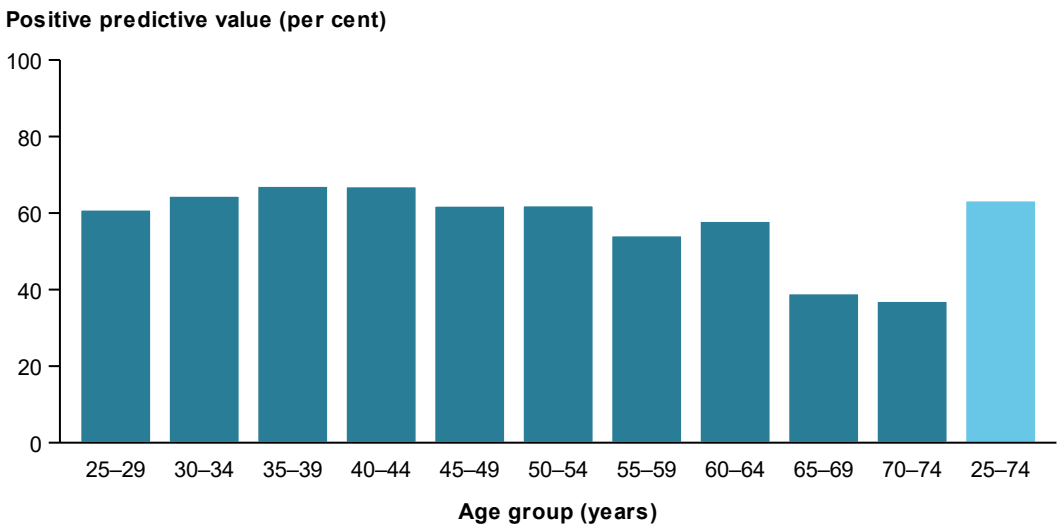
Screening test result	Number	Positive predictive value (%)
Primary screening test HPV 16/18	1,447	67.1
Primary screening test (not 16/18) + any high-grade/glandular LBC	1,203	74.2
Repeat screening test HPV (any)	2,454	57.3
Total	**5,104**	**63.3**

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Positive predictive value of colposcopy by age

The positive predictive value of colposcopy is shown by age in Figure 3.16.1. This was highest at above 64% for participants aged 30–44, and lowest for participants aged 65–74 (Figure 3.16.1).

Figure 3.16.1: Positive predictive value of colposcopy, by age, 2020

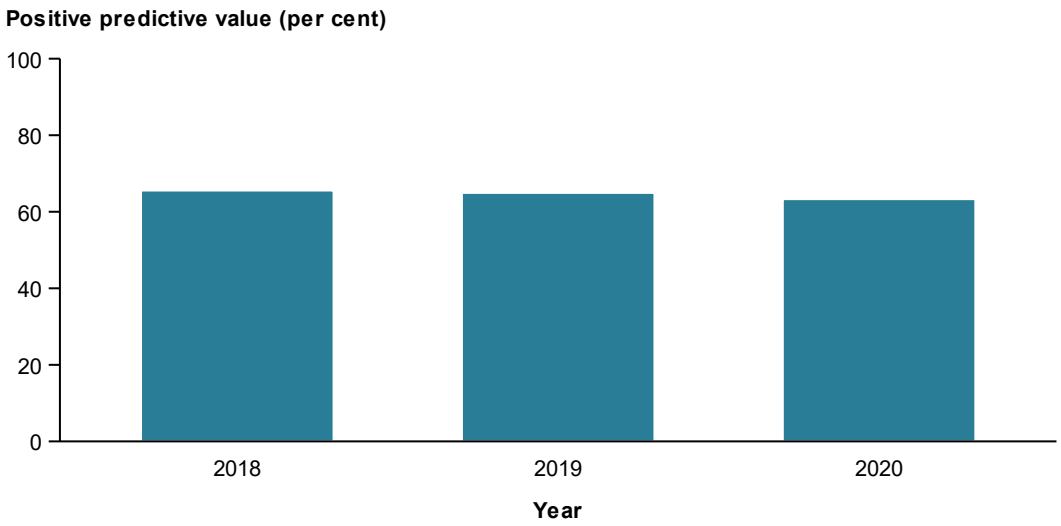


Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A16.1.

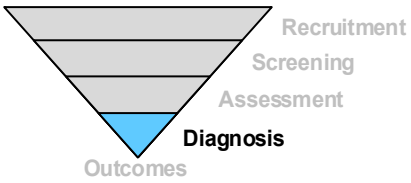
Positive predictive value of colposcopy trends

The positive predictive value of colposcopy decreased from 65.5% in 2018, to 64.9% in 2019, and to 63.3% in 2020 (Figure 3.16.2).

Figure 3.16.2: Positive predictive value of colposcopy, by year, 2018 to 2020



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data and notes for this figure are available in Table A16.2.



Diagnosis

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

Summary high-grade cervical abnormality detection rate data

In 2021, there were 16.6 people with a high-grade abnormality detected by histology per 1,000 screened, for participants aged 25–74.

Definition:

Number of people aged 25–74 with a high-grade abnormality detected on histology in a calendar year per 1,000 people 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. Therefore, one of the aims of the NCSP is to detect these lesions before they progress and become invasive.

High-grade abnormalities of the cervix include cervical intraepithelial neoplasia (CIN) that has been graded as moderate (CIN 2) or severe (CIN 3), or for which the grade has not been specified, as well as endocervical dysplasia and adenocarcinoma in situ.

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 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 restricted 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 able to be included in these data. This indicator is therefore affected by the completeness of histology as reported to the NCSR by pathology laboratories.

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 last is counted.

This performance indicator is based on histology performed in 2021. This allows 6 months to 30 June 2022 to ensure that histology data to 31 December 2021 are complete.

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)).

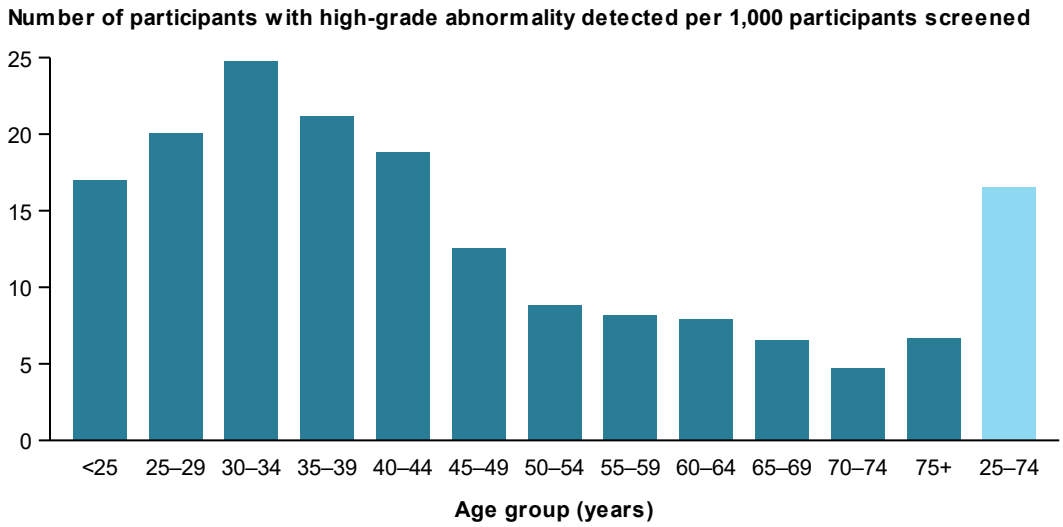
Results

In 2021, a high-grade abnormality was detected by histology in 14,774 participants aged 25–74, which equates to 16.6 participants with a high-grade abnormality detected per 1,000 screened. This means that for every 1,000 participants screened, 17 had a high-grade abnormality detected, providing an opportunity for treatment before possible progression to cervical cancer.

High-grade cervical abnormality detection rate by age

The high-grade abnormality rate was highest for participants aged 30–34 at 24.7 per 1,000 participants screened, thereafter decreasing with increasing age to less than 10 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, 2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). 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 CIN (CIN 2) and severe CIN (CIN 3) grade, as well as CIN for which the grade has not been specified. There are also endocervical high-grade abnormalities. These are much rarer, and include endocervical dysplasia and adenocarcinoma in situ (AIS), as well as mixed abnormalities that include both CIN3 and adenocarcinoma in situ.

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

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

CIN 3 was present in more than half (58.0%) of the participants in which a high-grade abnormality was detected, with CIN 2 the next most common abnormality, present in 32.6% of the participants in which a high-grade abnormality was detected.

As expected, endocervical abnormalities were rarer. The most common of these, adenocarcinoma in situ, was found in 2.4% of the participants in which a high-grade abnormality was detected.

Table 3.17.1: Number of participants with high-grade abnormality detected, by histological type, participants aged 25–74, 2021

	CIN NOS	CIN2	CIN3	Endocervical dysplasia	AIS	Mixed CIN3/AIS
Number	777	4,822	8,564	43	359	209
%	5.3	32.6	58.0	0.3	2.4	1.4

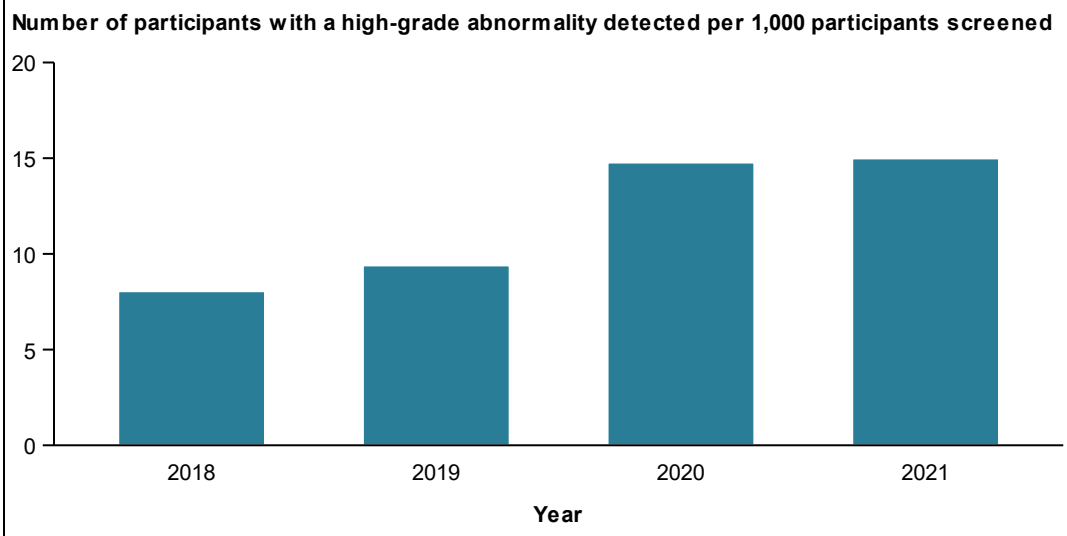
Note: CIN = cervical intraepithelial lesion; AIS = adenocarcinoma in situ.

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). Data by 5-year age groups are available in Table A17.2.

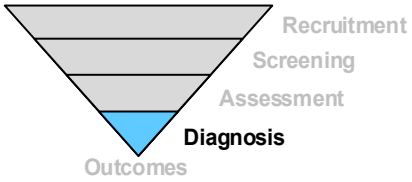
High-grade cervical abnormality detection rate trends

The high-grade abnormality rate has increased from an age-standardised 8.0 participants with a high-grade histology per 1,000 participants screened in 2018, to 9.4 in 2019, to 14.8 in 2020, and to 15.0 per 1,000 participants screened in 2021 (Figure 3.17.2).

Figure 3.17.2: High-grade cervical abnormality detection rate, by year, 2018 to 2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). 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 2021, there was 1.0 participant with a cervical cancer detected by histology per 1,000 screened, for participants aged 25–74.

Definition:

Number of people aged 25–74 with cervical carcinoma on histology per 1,000 people 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 indicator is therefore affected by the completeness of histology as reported to the NCSR by pathology laboratories.

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 last iss counted.

This performance indicator is based on histology performed in 2021. This allows 6 months to 30 June 2022 to ensure that histology data to 31 December 2021 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.

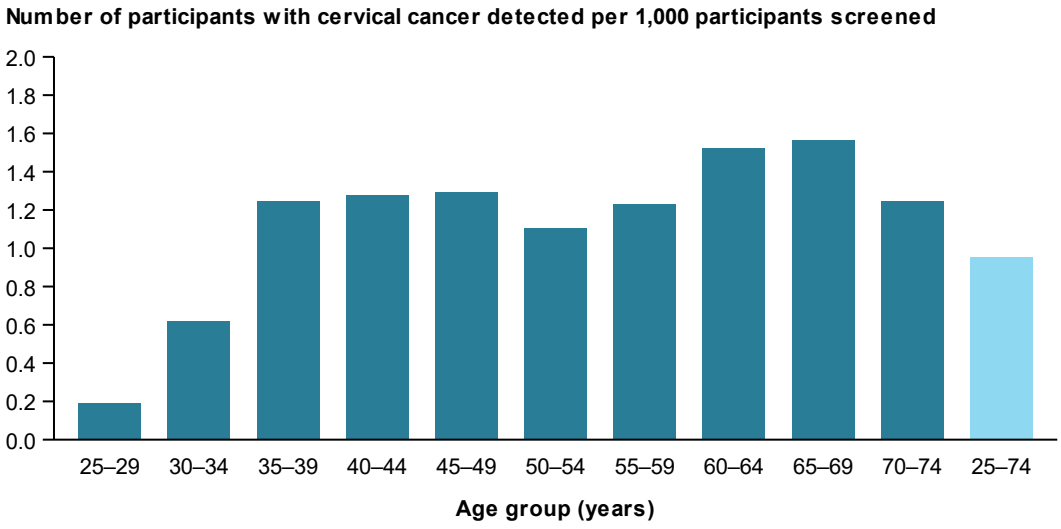
In 2021, a cervical cancer was detected by histology in 851 participants aged 25–74, which equates to 1.0 participant with a cervical cancer detected by histology per 1,000 participants screened. This means that, for every 1,000 participants screened, 1 participant had a cervical cancer detected.

The cervical cancer detection rate of 1.0 per 1,000 participants screened is far lower than the high-grade abnormality detection rate of 16.6 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.

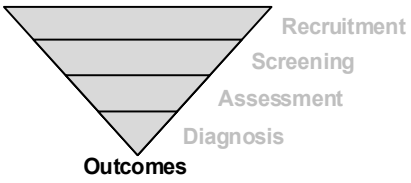
Cervical cancer detection rate by age

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 per 1,000 participants screened, respectively. The cervical cancer detection rate was between 1.1 and 1.6 participants with cervical cancer detected per 1,000 participants screened for all ages between 35–39 and 70–74 (Figure 3.17.3).

Figure 3.17.3: Cervical cancer detection rate, by age, 2021



Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022). 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 people aged 25–74 diagnosed with cervical carcinoma categorised into never screened, lapsed screening and adequately screened based on time since last screen.

Rationale:

A measure of the burden of disease due to a lack of participation in the screening program. Time since last screen is used to categorise all people diagnosed with cervical carcinoma as never screened, lapsed screening, or adequately screened. Most cervical carcinomas have historically been diagnosed in never screened people, 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.

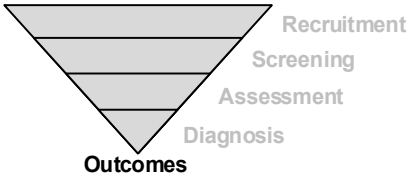
Lapsed screening is defined as last screening test >5.5 years prior to cancer diagnosis.

Adequately 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

851 women aged 25–74 were diagnosed with cervical cancer in 2018, which is an incidence rate of 10.9 new cases per 100,000 women.

Definition:

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

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 2018 version of the ACD.

The 2018 version of the ACD currently contains data on all cases of cancer diagnosed from 1982 to 2018 for all states and territories, with the following exceptions:

- 2018 incidence data for NSW death certificate only (DCO) cases were not available in time for inclusion in the 2018 ACD. The AIHW estimated these data based on the NSW DCO cases for 2017.
- There are expected to be some ‘late registrations’. These are cases of cancer that were diagnosed in 2018 but for which not enough details had been provided to the relevant cancer registry in time for the case to be included in the 2018 ACD.

Guide to interpretation:

Lower cervical cancer incidence is better.

Results

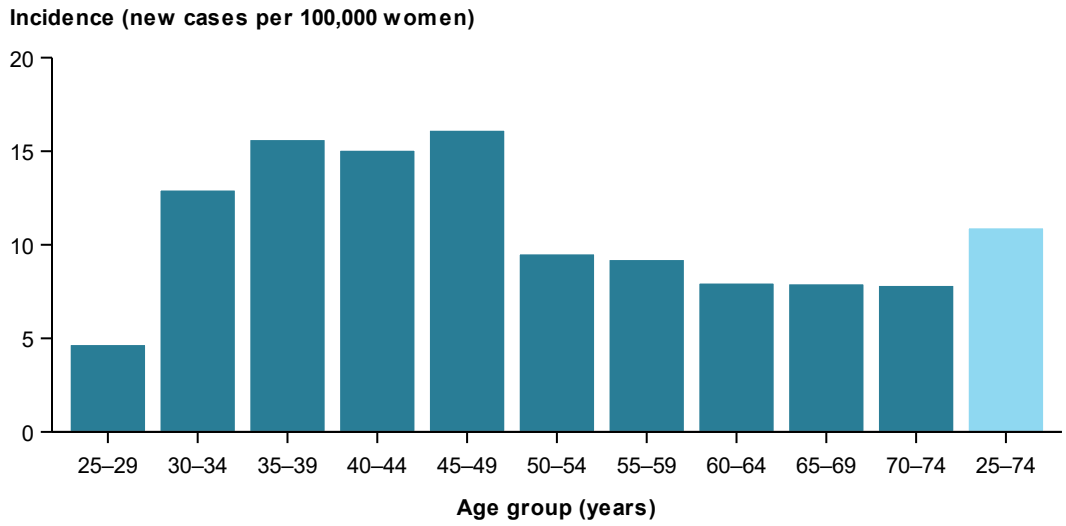
In 2018, there were 936 new cases of cervical cancer diagnosed in women of all ages, which is 7.4 new cases per 100,000 women (an incidence rate of 7.3 new cases per 100,000 women when age-standardised to allow comparison over time or across population groups). Of these, 851 new cases of cervical cancer were diagnosed in women aged 25–74 (the target age group of the NCSP), which is equivalent to 10.9 new cases per 100,000 women aged 25–74 (an incidence rate of 11.3 new cases per 100,000 women aged 25–74 when age-standardised 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 2018, within the age group 25–74, cervical cancer incidence was lowest for women aged 25–29 at 4.7 new cases per 100,000 women. Incidence peaked for women aged 35–49 at between 15 and 16 new cases per 100,000 women, after which incidence fell to below 10 new cases per 100,000 women for women aged 50–74.

Figure 3.19.1: Cervical cancer incidence, by age, 2018



Source: AIHW Australian Cancer Database 2018. 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), and 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), and other carcinoma.

In 2018, of the 851 cervical cancers diagnosed in women aged 25–74, 826 (97.0%) were carcinomas, 5 (0.6%) were sarcomas 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 2018 (the latest year) and 1988 (30 years prior, and before the commencement of the NCSP in 1991) are shown in Figure 3.19.2. In 2018, squamous cell carcinomas comprised 62.7% of all cervical

carcinomas, followed by adenocarcinomas at 29.0% and adenosquamous carcinomas at 2.8%. Other specified and unspecified carcinomas comprised 5.5% of all cervical carcinomas. This is in contrast to 1988, when squamous cell carcinomas comprised 73.6% of all cervical carcinomas, with adenocarcinomas far rarer at 17.6% and adenosquamous carcinomas at 4.5%. Other specified and unspecified carcinomas were the remaining 4.2%.

Table 3.19.1: Cervical cancer incidence, by histological type, women aged 25–74, 2018

Type of cervical cancer	New cases	Crude rate	AS rate	% of cervical cancers	% of carcinomas
1: Carcinoma	826	10.6	11.0	97.0	100.0
1.1: Squamous cell carcinoma	518	6.7	6.9	60.8	62.7
1.2: Adenocarcinoma	239	3.1	3.2	28.1	29.0
1.3: Adenosquamous carcinoma	23	0.3	0.3	2.7	2.8
1.4: Other specified and unspecified carcinoma	45	0.6	0.6	5.3	5.5
2: Sarcoma	5	0.1	0.1	0.6	. .
3: Other specified and unspecified malignant neoplasm	21	0.3	0.3	2.4	. .
Total	**851**	**10.9**	**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.

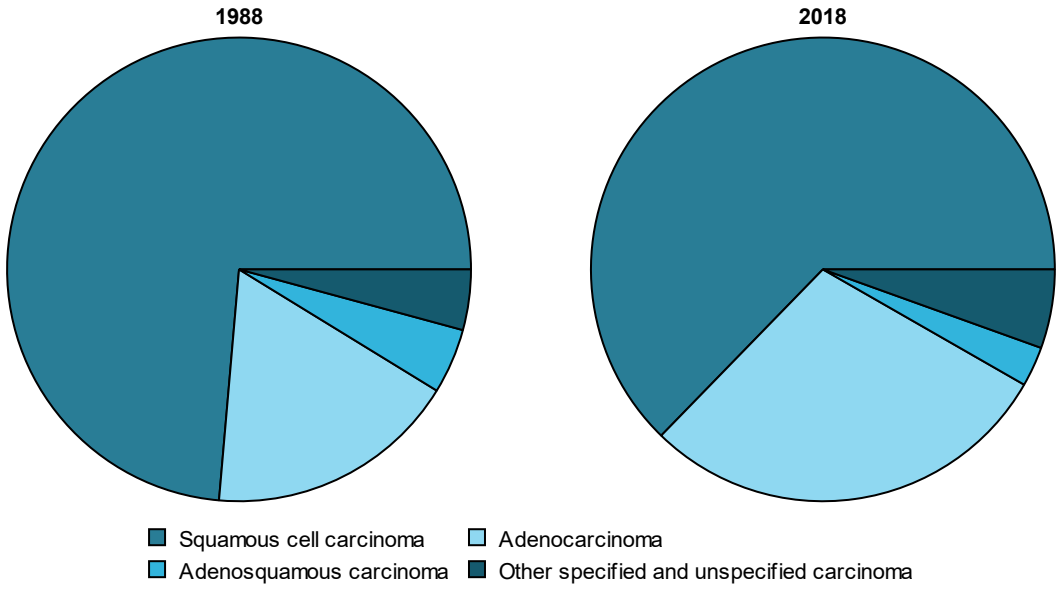
'Sarcoma' = ICD-O-3 codes 8800–8811, 8830, 8840–8921, 8990–8991, 9040–9044, 9120–9133, 9150, 9540–9581.

'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 2018.

Figure 3.19.2: Cervical cancer incidence, by histological type, women aged 25–74, 1988 and 2018



Source: AIHW Australian Cancer Database 2018.

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 61% 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 28% 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 2014–2018, cervical cancer incidence for women aged 25–74 increased with increasing remoteness. Age-standardised rates are shown in Figure 3.19.3 and below.

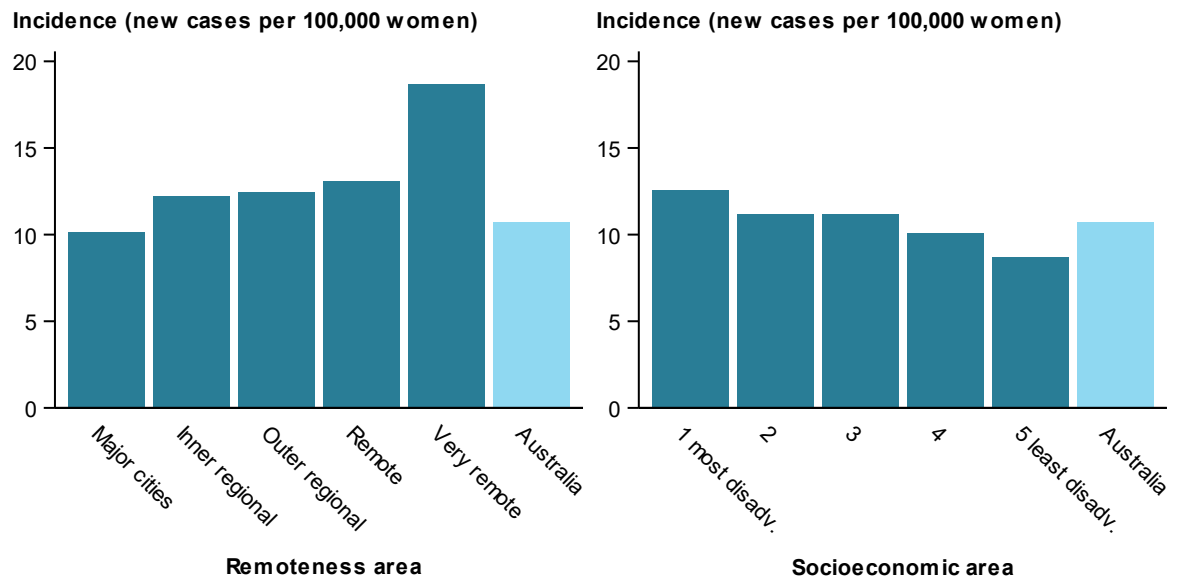
Incidence of cervical cancer in women aged 25–74 in 2014–2018 was lowest for women living in *Major cities* at 10.1 new cases per 100,000 women. It was similar for women residing in *Inner regional*, *Outer regional* and *Remote* areas, being 12.2, 12.4 and 13.0 new cases per 100,000 women, respectively. Incidence was highest for women residing in *Very remote* areas at 18.7 new cases per 100,000 women.

Incidence by socioeconomic area

In 2014–2018, cervical cancer incidence for women aged 25–74 increased with increasing socioeconomic disadvantage. Age standardised rates are shown in Figure 3.19.3 and below.

In 2014–2018, cervical cancer incidence in women aged 25–74 was lowest for women residing in areas of lowest socioeconomic disadvantage at 8.7 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 12.6 new cases per 100,000 women.

Figure 3.19.3: Cervical cancer incidence, by remoteness area and socioeconomic area, women aged 25–74, 2014–2018



Source: AIHW Australian Cancer Database 2018. Data and notes for this figure are available in Table A19.3 and A19.4.

Incidence by Indigenous status

Reliable national data on the diagnosis of cervical cancer for Indigenous Australians 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 are only included for New South Wales, Victoria, Queensland, Western Australia and the Northern Territory. Data are not included for South Australia, Tasmania or the Australian Capital Territory because the Indigenous status variable is not of sufficient quality in these jurisdictions.

The incidence counts and rates for Indigenous Australian women and non-Indigenous Australian 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 Indigenous Australian women are misclassified as non-Indigenous. Therefore, the estimates presented should be interpreted with caution.

Box 3.19.1: Indigenous Australians – incidence and mortality: populations and rates

To derive cervical cancer incidence and mortality rates for Indigenous Australians, 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.

Preliminary population estimates for Aboriginal and Torres Strait Islander people based on the 2021 Census will be available in September 2022, but the projections and back-casting, and hence the finalised population estimates, will only be available in 2023.

The final estimated resident Aboriginal and Torres Strait Islander 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 (ABS) notes that the population increase is greater than demographic factors alone can explain. As well, the 2016 estimated population was 7% larger than the 2016 projected population based on the 2011 Census.

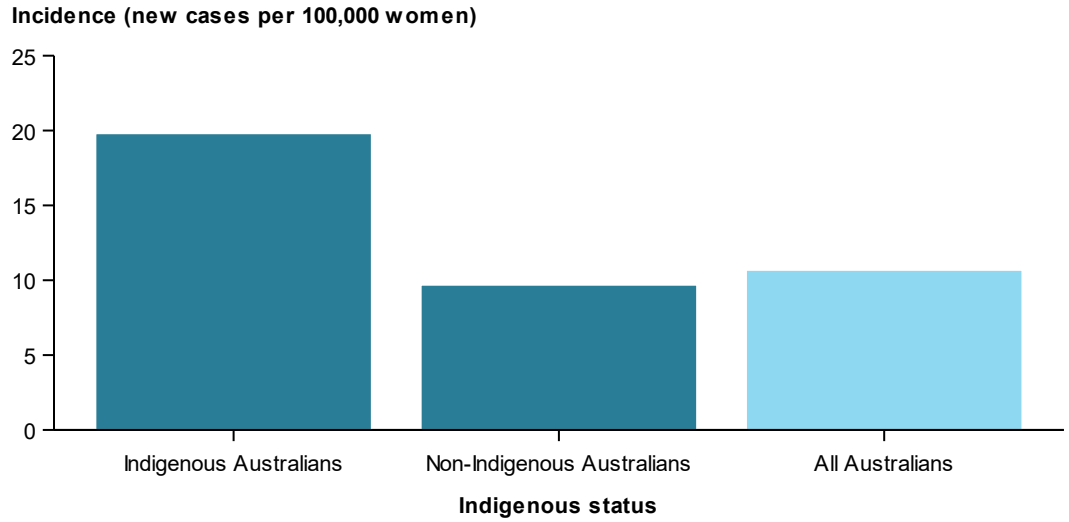
The extent of the increase in the Indigenous population estimates between 2011 and 2016 means that any rates calculated with Indigenous population estimates based on the 2016 Census will be lower than those based on the 2011 Census and should not be compared with rates calculated using populations based on previous Censuses.

Analysis of data from these jurisdictions showed that, over the 5 years 2014–2018, there were 161 Indigenous Australian women aged 25–74 diagnosed with cervical cancer, equating to 19.4 new cases per 100,000 Indigenous women in the population.

This is a higher rate than experienced by non-Indigenous women

Over the 5 years 2014–2018, for the target age group 25–74, the age-standardised incidence rate among Aboriginal and Torres Strait Islander women was 2.0 times the rate of non-Indigenous Australians (19.8 and 9.7 new cases per 100,000 women in the population, respectively) (Figure 3.19.4).

Figure 3.19.4: Cervical cancer incidence, by Indigenous status, women aged 25–74, 2014–2018



Note: Data shown for 'Indigenous', 'Non-Indigenous' and 'Total' are for New South Wales, Victoria, Queensland, Western Australia 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.

Source: AIHW Australian Cancer Database 2018. Data and notes for this figure are available in Table A19.5.

Incidence trends

There was a modest decrease in the age-standardised 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 3.19.5).

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.

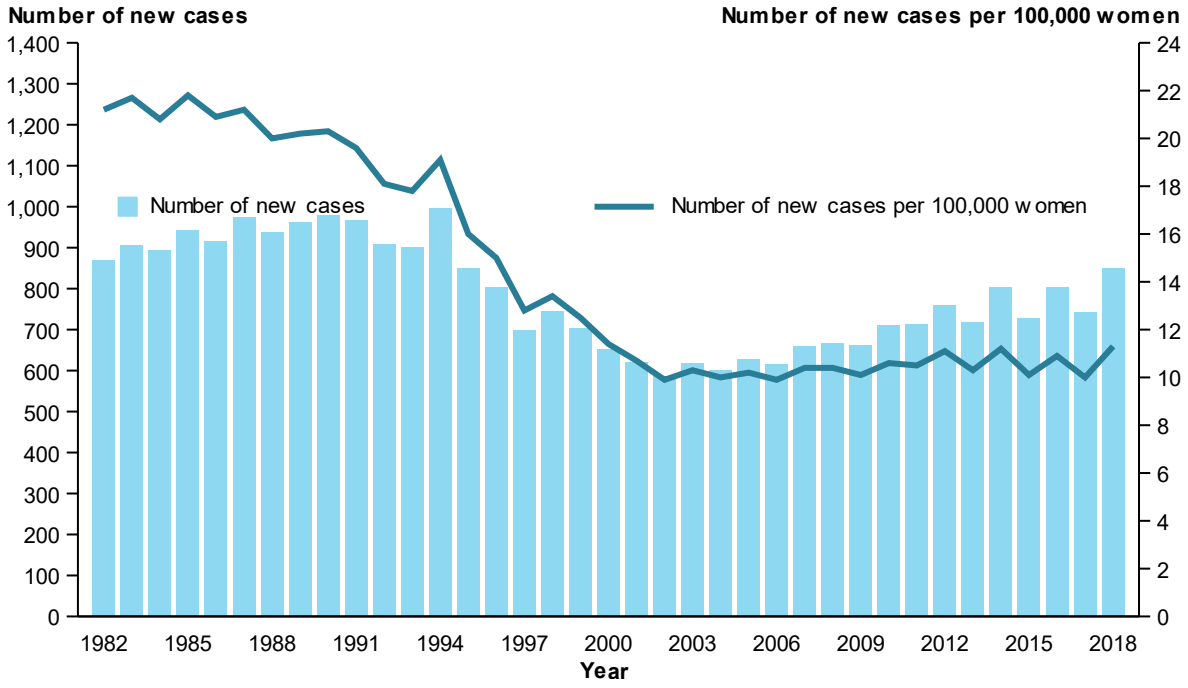
Trends for women aged 25–74, women aged 20–69, and women of all ages are shown in Table A19.6. Between 2002 and 2018:

- 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 2018 – and a decrease in the risk of diagnosis before age 85 from 1 in 74 in 1982 to 1 in 161 in 2018 (AIHW 2022c).

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.

Figure 3.19.5: Cervical cancer incidence, by year, women aged 25–74, 1982 to 2018



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 2018. Data and notes for this figure are available in Table A19.6.

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 2018 Australian Cancer Database which includes data from the National Death Index on deaths (from any cause) that occurred up to 31 December 2018, which were used to determine which people with cancer had died and when this occurred.

In 2014–2018, women diagnosed with cervical cancer in Australia had a 74.2% 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 78.2%.

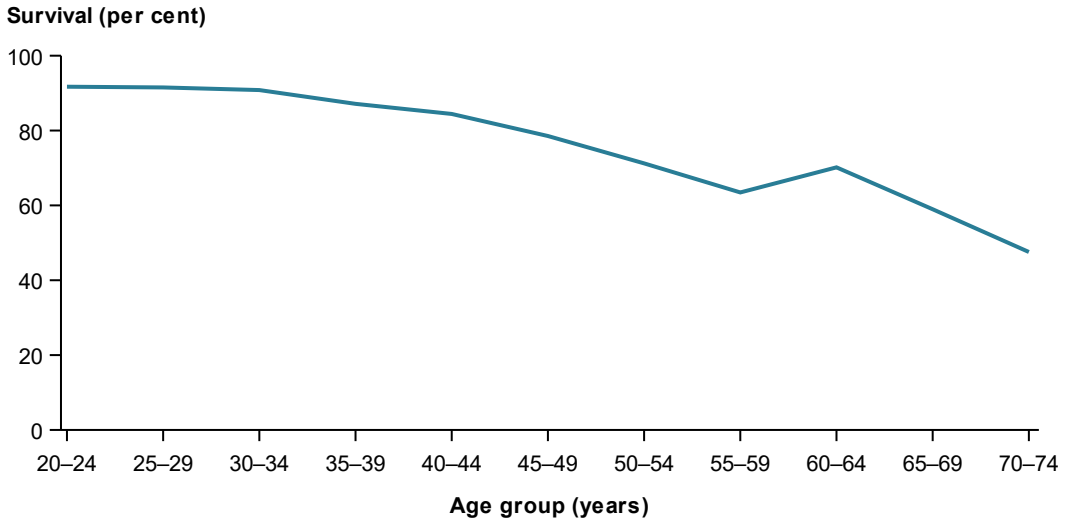
Five-year relative survival by age

Five-year relative survival from cervical cancer generally decreased with increasing age; women aged 20–24 had the highest survival at 91.7%, whereas women aged 70–74 diagnosed with cervical cancer had only a 47.6% chance of surviving for 5 years (Figure 3.19.6).

Five-year relative survival trends

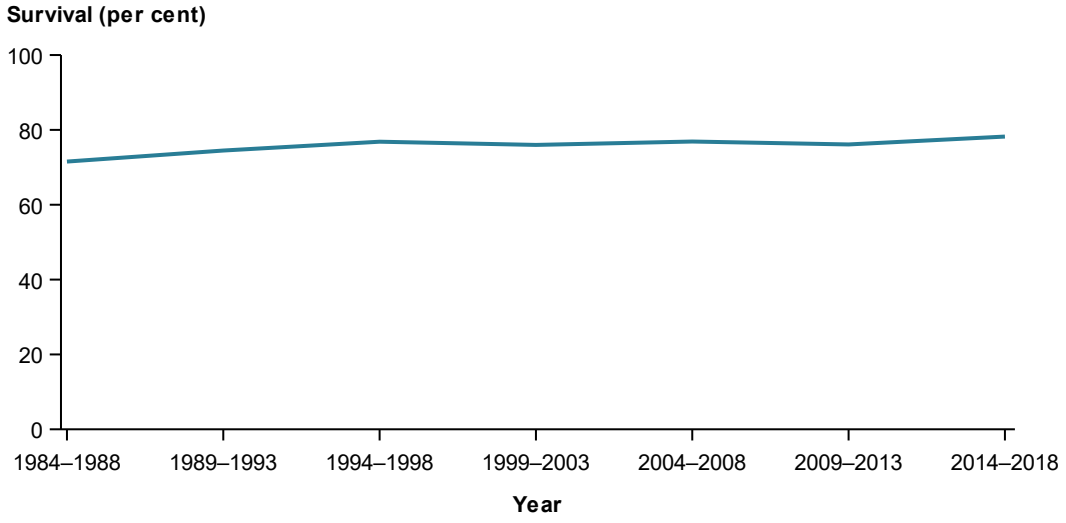
Between 1984–1988 and 2014–2018, 5-year relative survival increased from 71.5% to 78.2% for women aged 25–74 (Figure 3.19.7).

Figure 3.19.6: Five-year relative survival from cervical cancer, by age, 2014–2018



Source: AIHW Australian Cancer Database 2018. Data and notes for this figure are available in Table A19.7.

Figure 3.19.7: Trends in 5-year relative survival from cervical cancer in women aged 25–74, 1984–1988 to 2014–2018



Source: AIHW Australian Cancer Database 2018. Data and notes for this figure are available in Table A19.8.

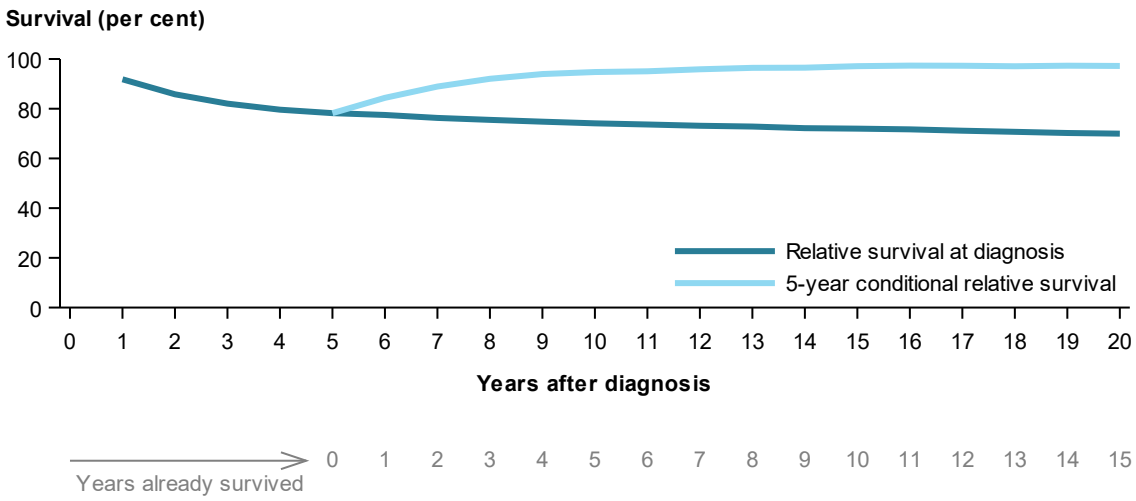
Conditional survival

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 3.19.8. 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, the prospect of surviving for at least 5 more years after having already survived for 5, 10 or 15 years was much higher than relative survival, at around 95% to 97% (Figure 3.19.8), 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.

Figure 3.19.8: Relative survival at diagnosis and 5-year conditional survival from cervical cancer in women aged 25–74, 2014–2018



Source: AIHW Australian Cancer Database 2018. Data and notes for this figure are available in Table A19.9.

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 2018 ACD – which includes data from the National Death Index on deaths (from any cause) that occurred up to 31 December 2018, 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 2018, there were 3,284 women aged 25–74 alive who had been diagnosed with cervical cancer in the previous 5 years and 5,823 who had been diagnosed in the previous 10 years (Table 3.19.2).

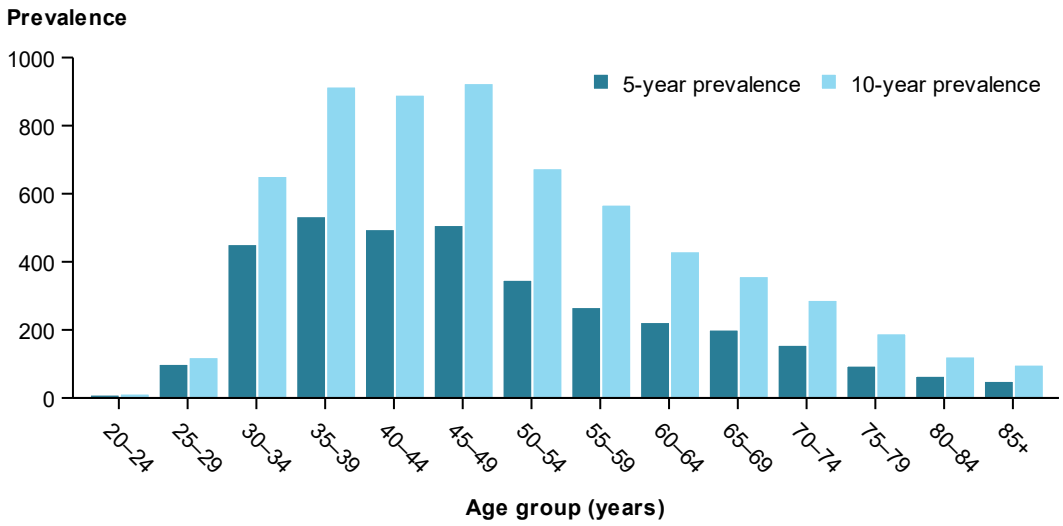
Prevalence by age is shown in Figure 3.19.9.

Table 3.19.2: Prevalence of cervical cancer, by age, end of 2018

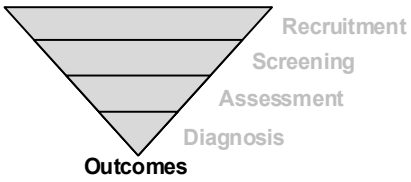
Age group	5-year prevalence	10-year prevalence
20–24	10	13
25–29	100	120
30–34	452	652
35–39	534	915
40–44	496	891
45–49	508	925
50–54	347	675
55–59	267	568
60–64	223	431
65–69	201	358
70–74	156	288
75–79	95	190
80–84	65	122
85+	50	98
25–74	**3,284**	**5,823**
All ages	**3,507**	**6,249**

Source: AIHW Australian Cancer Database 2018.

Figure 3.19.9: Prevalence of cervical cancer, by age, end of 2018



Source: AIHW Australian Cancer Database 2018.



Performance Indicator 20: Mortality from cervical cancer

Summary cervical cancer mortality data

165 women aged 25–74 died from cervical cancer in 2020, which is a mortality rate of 2.0 deaths per 100,000 women.

Definition:

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

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

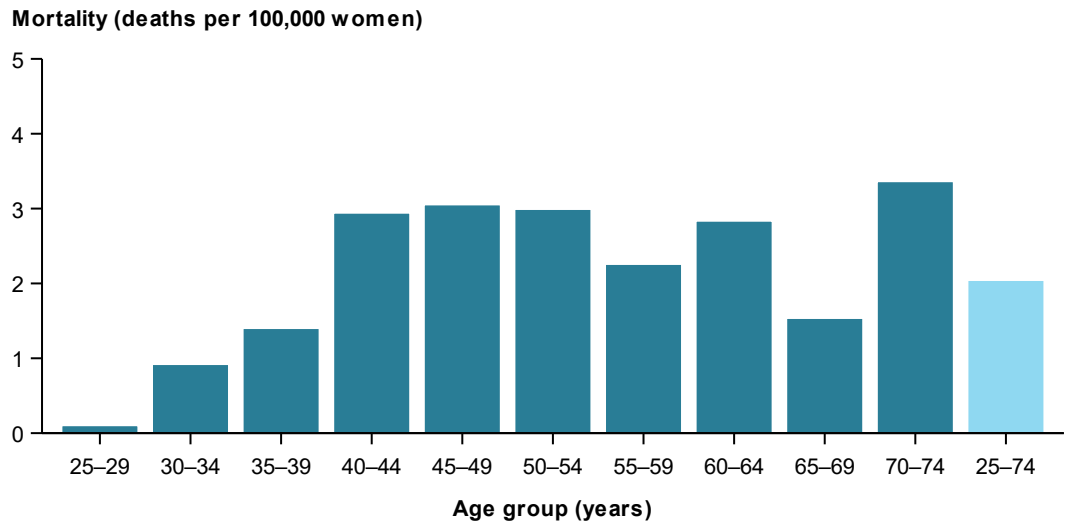
In 2020, there were 209 deaths from cervical cancer, which is 1.6 deaths per 100,000 women (a mortality rate of 1.5 deaths per 100,000 women when age-standardised to allow comparison over time or across population groups). Of these, 165 deaths from cervical cancer occurred in women aged 25–74 (the target age group for the NCSP), which is equivalent to 2.0 deaths per 100,000 women (a mortality rate of 2.0 deaths per 100,000 women when age-standardised 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 2020, within the age group 25–74, cervical cancer mortality was lowest for women aged under 40, being fewer than 1 death per 100,000 women for ages 25–29 and 30–34, and 1.4 deaths per 100,000 women for ages 35–39. Mortality peaked for women aged 40–54 at around 3 deaths per 100,000 women, after which mortality varied between 1.5 and 3.4 deaths per 100,000 women, with relatively small number resulting in variability across these older age groups.

Figure 3.20.1: Cervical cancer mortality, by age, 2020



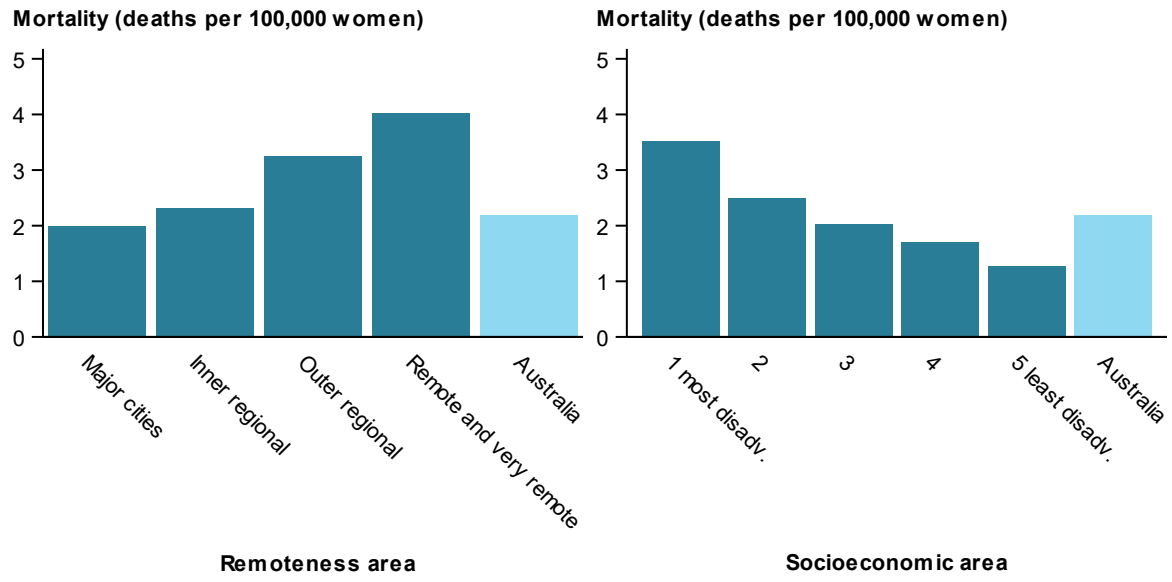
Source: AIHW National Mortality Database. Data and notes for this figure are available in Table A20.1.

Mortality by remoteness area

In 2016–2020, cervical cancer mortality for women aged 25–74 increased with increasing remoteness. Age-standardised rates are shown in Figure 3.20.2 and below.

Mortality in 2016–2020 was lowest for women residing in *Major cities* and *Inner regional* areas at 2.0 and 2.3 deaths per 100,000 women aged 25–74, respectively. Mortality was higher for women residing in *Outer regional* areas at 3.2 deaths per 100,000 women and highest in *Remote and very remote* areas at 4.0 deaths per 100,000 women aged 25–74.

Figure 3.20.2: Cervical cancer mortality, by remoteness area and socioeconomic area, women aged 25–74, 2016–2020



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 2016–2020, cervical cancer mortality for women aged 25–74 increased with increasing socioeconomic disadvantage. Age-standardised rates are shown in Figure 3.20.2 and below.

Mortality in 2016–2020 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 1.3 deaths per 100,000 women.

Mortality by Indigenous status

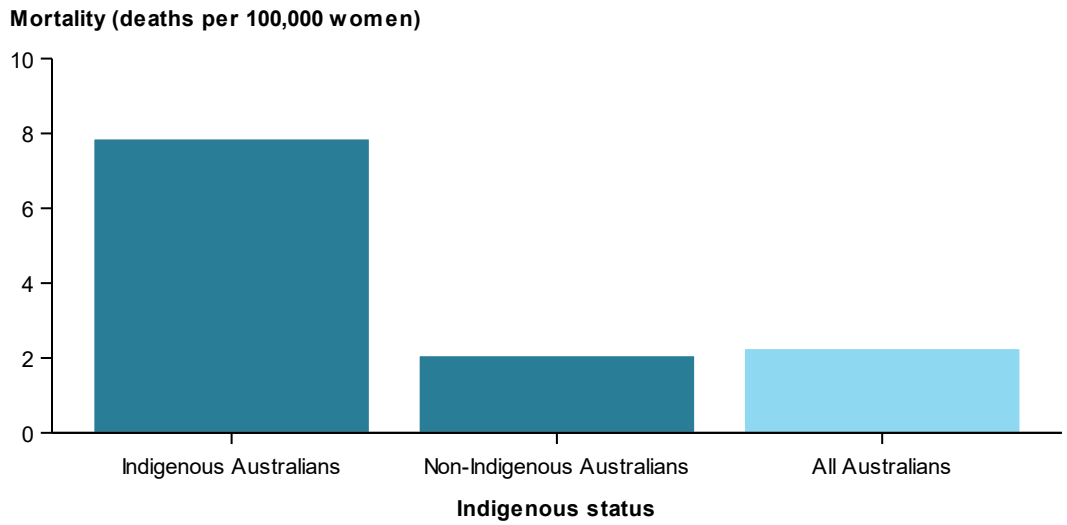
Only mortality data from New South Wales, Queensland, Western Australia, South Australia and the Northern Territory are considered adequate for reporting by Indigenous status. Other jurisdictions have a small number of Indigenous deaths, and the identification of these in their death registration systems is relatively poor, making the data less reliable. Note that these jurisdictions differ from those used to calculate incidence for Indigenous and non-Indigenous Australians. See Box 3.19.1 for information on Indigenous rates calculated using Indigenous population estimates from the 2016 Census.

Over the 5 years 2016–2020, there were 62 Indigenous Australian women aged 25–74 who died from cervical cancer. This is 7.2 deaths per 100,000 Indigenous women in the population.

This is higher than the rate experienced by non-Indigenous women.

Over the 5 years 2016–2020, for the target age group 25–74, the age-standardised mortality rate among Aboriginal and Torres Strait Islander women was 3.8 times the rate of non-Indigenous Australians (7.9 and 2.1 deaths per 100,000 women in the population, respectively) (Figure 3.20.3).

Figure 3.20.3: Cervical cancer mortality, by Indigenous status, women aged 25–74, 2016–2020



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.

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

Mortality trends

Similar to the trend for cervical cancer incidence, there was a modest decrease in the age-standardised 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 after which it remained steady at between 2.0 and 2.5 deaths per 100,000 women for all years between 2004 and 2020.

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.

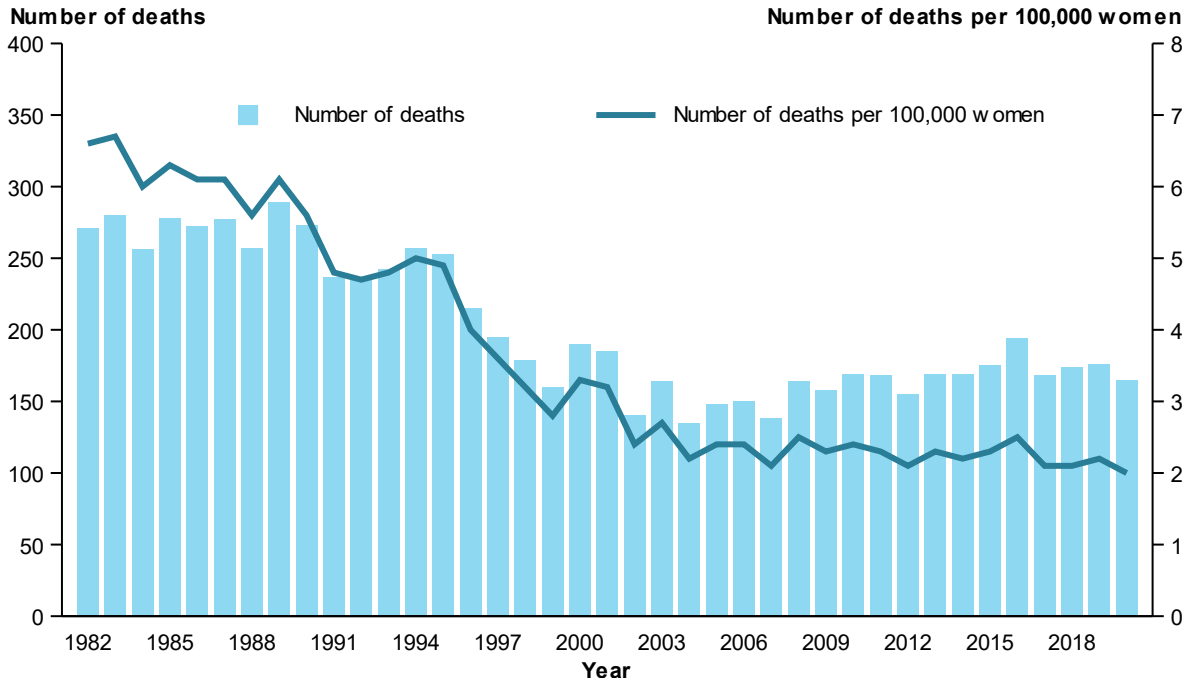
Trends for women aged 25–74, women aged 20–69, and women of all ages are shown in Table A20.6. Between 2004 and 2020:

- Incidence remained steady for women aged 25–74, at between 2.0 and 2.5 deaths per 100,000 women.
- Incidence remained steady for women aged 20–69, at between 1.8 and 2.1 deaths per 100,000 women.
- Incidence remained steady for women of all ages at around 1.5 and 2.0 deaths per 100,000 women.

These age groups experienced their lowest mortality in 2020 at 2.0, 1.8, 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 690 in 2020 (AIHW 2022c).

Figure 3.20.4: Mortality from cervical cancer in women aged 25–74, 1982 to 2020



Notes

1. Deaths from 1982 to 2019 were derived by year of death; deaths in 2020 were derived by year of registration of death. Deaths registered in 2017 and earlier are based on the final version of cause of death data; deaths registered in 2018 are based on the revised version; and deaths registered in 2019 and 2020 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 A20.6.

Appendix A: Additional data tables

A1 Participation

Table A1.1: Participation, by age, 2018–2021

Age group	Number	Crude rate (%)
<25	78,904	. .
25–29	625,799	67.0
30–34	588,344	61.7
35–39	545,289	62.4
40–44	483,909	65.0
45–49	490,164	67.4
50–54	424,432	65.7
55–59	398,435	65.5
60–64	338,602	63.4
65–69	263,626	58.4
70–74	121,454	31.3
75+	9,841	. .
25–74	**4,280,054**	**62.4**
All ages	**4,369,532**	**. .**

Notes

1. Number is the number of participants who had a screening HPV test (reason for test of primary screening or repeat HPV test) between 1 January 2018 and 31 December 2021. 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 repeat HPV test) between 1 January 2018 and 31 December 2021 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 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 4.4 08/07/2022).

Table A1.2: Participation, by state and territory, participants aged 25–74, 2018–2021

State and territory	Number	Crude rate (%)	AS rate (%)
NSW	1,320,221	60.6	60.8
Vic	1,114,604	61.9	62.2
Qld	852,323	62.1	62.2
WA	457,134	64.4	64.4
SA	305,557	65.3	65.8
Tas	92,876	64.8	65.9
ACT	78,799	66.8	66.6
NT	42,006	62.5	61.3
Australia	**4,280,054**	**62.4**	**62.6**

Notes

1. Number is the number of participants who had a screening HPV test (reason for test of primary screening or repeat HPV test) between 1 January 2018 and 31 December 2021. 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 repeat HPV test) between 1 January 2018 and 31 December 2021 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. 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 4.4 08/07/2022).

Table A1.3: Participation, by remoteness area, participants aged 25–74, 2018–2021

Remoteness area	Number	Crude rate (%)	AS rate (%)
Major cities	3,151,259	63.2	63.3
Inner regional	719,096	59.8	60.6
Outer regional	320,317	59.0	59.7
Remote	45,665	58.6	58.3
Very remote	26,780	54.5	53.7
Australia	**4,280,054**	**62.4**	**62.6**

Notes

1. Number is the number of participants who had a screening HPV test (reason for test of primary screening or repeat HPV test) between 1 January 2018 and 31 December 2021. 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 repeat HPV test) between 1 January 2018 and 31 December 2021 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 4.4 08/07/2022).

Table A1.4: Participation, by socioeconomic area, participants aged 25–74, 2018–2021

Socioeconomic area	Number	Crude rate (%)	AS rate (%)
1 (most disadvantaged)	712,470	55.6	56.0
2	783,373	58.4	58.8
3	857,942	61.3	61.5
4	926,903	64.5	64.4
5 (least disadvantaged)	981,371	70.5	70.5
Australia	**4,280,054**	**62.4**	**62.6**

Notes

1. Number is the number of participants who had a screening HPV test (reason for test of primary screening or repeat HPV test) between 1 January 2018 and 31 December 2021. 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 repeat HPV test) between 1 January 2018 and 31 December 2021 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 4.4 08/07/2022).

Table A1.5: Participants, by Indigenous status, aged 25–74, 2018–2021

Indigenous status	Number
Last identified Indigenous status	
Indigenous	78,596
Non-Indigenous	3,026,496
Not stated	1,049,651
Not populated	125,311
Ever identified Indigenous status	
Never indicated Aboriginal or Torres Strait Islander	*4,194,035*
Aboriginal	*74,421*
Torres Strait Islander	*4,663*
Aboriginal and Torres Strait Islander	*6,935*
Indigenous	86,019
Australia	**4,280,054**

Non-italicised are grouped by the AIHW into the categories of 'Indigenous', 'Non-Indigenous' and 'Not stated'. Indigenous = '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'. It is not possible to distinguish between the categories of 'Non-Indigenous' and 'Not stated' for Ever Indigenous, as these are combined into the single category 'Never indicated Aboriginal or Torres Strait Islander'

Note: Participants are restricted to those who had a screening HPV test (reason for test of primary screening or repeat HPV test).

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Table A1.6: Participants, by CALD status, aged 25–74, 2018–2021

Main language other than English spoken at home	Number
English only	526,930
Languages other than English	221,846
Not stated	32,417
Not populated	3,498,861
Total	**4,280,054**
Country of birth	**Number**
Australia	497,104
Country other than Australia	216,803
Not stated	647,255
Not populated	2,918,892
Total	**4,280,054**

Note: Participants are restricted to those who had a screening HPV test (reason for test of primary screening or repeat HPV test).

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Table A1.7: Progression towards 5-year participation, by age, 2018, 2018–2019, 2018–2020, and 2018–2021

	Year			
Age group	**2018**	**2018–2019**	**2018–2020**	**2018–2021**
25–29	21.2	41.1	54.5	66.2
30–34	22.5	43.0	53.6	61.1
35–39	23.2	44.7	54.5	61.5
40–44	24.9	48.2	57.8	64.2
45–49	26.9	51.9	61.6	67.8
50–54	26.1	50.5	59.3	65.0
55–59	27.0	52.6	60.7	65.7
60–64	25.9	50.9	58.1	62.8
65–69	24.4	47.7	53.8	57.8
70–74	8.8	22.4	26.6	31.0
25–74	**23.5**	**45.8**	**55.1**	**61.9**

Note: Crude rate is the number of participants who had a screening HPV test (reason for test of primary screening or repeat 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 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 4.4 08/07/2022).

Table A1.8: Participants, progression towards 5-year participation, by state and territory, 2018, 2018–2019, 2018–2020, and 2018–2021

	Year			
State and territory	**2018**	**2018–2019**	**2018–2020**	**2018–2021**
NSW	498,390	965,601	1,176,614	1,320,221
Vic	425,578	832,880	988,726	1,114,604
Qld	318,902	626,192	756,992	852,323
WA	175,024	340,494	408,926	457,134
SA	120,128	233,095	276,491	305,557
Tas	35,665	68,222	82,116	92,876
ACT	28,404	56,431	69,736	78,799
NT	15,428	29,505	36,737	42,006
Australia	**1,624,416**	**3,166,291**	**3,812,160**	**4,280,054**

Notes:

1. Number is the number of participants who had a screening HPV test (reason for test of primary screening or repeat 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. 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 4.4 08/07/2022).

Table A1.9: Progression towards 5-year participation, by state and territory, 2018, 2018–2019, 2018–2020, and 2018–2021

	Year							
State and territory	**2018**		**2018–2019**		**2018–2020**		**2018–2021**	
	Crude rate	AS rate	Crude rate	AS rate	Crude rate	AS rate	Crude rate	AS rate
NSW	22.6	22.8	43.9	44.2	53.5	53.7	60.0	60.2
Vic	23.3	23.6	45.7	46.2	54.2	54.7	61.1	61.4
Qld	23.1	23.2	45.3	45.5	54.7	54.9	61.6	61.8
WA	24.6	24.6	47.8	47.9	57.4	57.5	64.2	64.2
SA	25.6	25.8	49.7	50.0	59.0	59.5	65.2	65.8
Tas	24.9	25.2	47.6	48.1	57.3	58.2	64.8	65.9
ACT	23.8	24.0	47.4	47.7	58.6	58.7	66.2	66.0
NT	22.8	22.5	43.7	43.2	54.4	53.6	62.2	61.0
Australia	**23.5**	**23.6**	**45.8**	**46.1**	**55.1**	**55.4**	**61.9**	**62.0**

Notes:

1. Crude rate is the number of participants who had a screening HPV test (reason for test of primary screening or repeat 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 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 4.4 08/07/2022).

Table A1.10: Coverage, by age, 2018–2021

Age group	Number	Crude rate (%)
<25	171,852	. .
25–29	692,604	74.1
30–34	662,050	69.4
35–39	619,702	71.0
40–44	552,069	74.2
45–49	557,059	76.5
50–54	475,501	73.7
55–59	436,905	71.8
60–64	364,712	68.3
65–69	282,124	62.5
70–74	133,972	34.6
75+	21,579	. .
25–74	**4,776,698**	**69.6**
All ages	**4,971,513**	**. .**

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 2021. 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 2021 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).

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Table A1.11: Coverage, by state and territory, participants aged 25–74, 2018–2021

State and territory	Number	Crude rate (%)	AS rate (%)
NSW	1,497,717	68.7	69.1
Vic	1,204,531	66.9	67.2
Qld	964,863	70.3	70.5
WA	510,237	71.9	71.9
SA	341,491	73.0	73.7
Tas	102,155	71.3	72.8
ACT	88,355	74.9	74.7
NT	47,270	70.4	69.0
Australia	**4,776,698**	**69.6**	**69.9**

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 2021. 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 2021 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. 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 4.4 08/07/2022).

Table A1.12: Reason for HPV test and LBC test, participants aged 25–74, 2018–2021

Reason for HPV test	Number	Per cent
Primary screening HPV test	4,295,536	73.0
Follow-up HPV test (Repeat HPV test after intermediate risk result)	428,675	7.3
Co-test – test of cure	338,159	5.7
Co-test – investigation of signs or symptoms	444,991	7.6
Co-test – other, as recommended in guidelines	103,045	1.8
Other	165,799	2.8
No HPV test performed or unknown reason	109,813	1.9
Reason for cytology test	**Number**	**Per cent**
Reflex LBC cytology after detection of oncogenic HPV in primary screening HPV test	421,467	7.2
Cytology after detection of oncogenic HPV in self-collected sample	547	0.0
Reflex LBC after detection of oncogenic HPV in Follow-up HPV test	225,274	3.8
Cytology at colposcopy	59,307	1.0
Co-test – test of cure	342,008	5.8
Co-test – investigation of signs or symptoms	447,757	7.6
Co-test – other, as recommended in guidelines	103,879	1.8
Other	159,947	2.7
Conventional Pap test to screen for cervical cancer precursors	2,522	0.0
No LBC test performed or unknown reason	4,123,310	70.1

Note*:* Based on participants who had an HPV or LBC test for any reason between 1 January 2018 and 31 December 2021. 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 4.4 08/07/2022).

Table A1.13: Number of screening HPV tests, per month, participants aged 25–74, 2018, 2019, 2020, and 2021

	Year			
Month	**2018**	**2019**	**2020**	**2021**
January	132,293	124,623	94,248	50,643
February	145,312	164,131	101,747	59,050
March	143,951	167,814	74,083	62,814
April	123,223	129,608	37,430	50,098
May	163,976	153,722	56,240	52,888
June	139,676	125,602	70,209	55,827
July	142,167	145,102	68,152	54,473
August	145,782	141,479	58,422	50,534
September	119,436	129,648	63,991	49,936
October	141,063	143,625	65,401	48,676
November	138,928	132,899	63,968	52,663
December	100,988	93,556	51,719	42,395

Note*:* Data are number of screening HPV tests (reason for test of primary screening or repeat HPV test) performed each month in 2018, 2019, 2020, and 2021 for participants aged 25–74. Excludes current Compass participants.

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

A2 Response to invitation

Table A2.1: Response to invitation, by age, 2021

		Response within 6 months	
Age group	**Invitations**	**Number**	**Crude rate (%)**
<25	2,419	199	8.2
25–29	338,410	43,660	12.9
30–34	190,707	18,666	9.8
35–39	247,037	20,701	8.4
40–44	141,727	14,795	10.4
45–49	131,588	13,382	10.2
50–54	119,675	11,085	9.3
55–59	111,544	9,509	8.5
60–64	99,717	8,384	8.4
65–69	91,868	6,579	7.2
70–74	256,601	9,181	3.6
75+	142	8	5.6
25–74	**1,728,874**	**155,942**	**9.0**

Note: Invitation refers to the first invitation for a person that was not followed by a 'Return to Sender' notification; number refers to the number who had an HPV test within 6 months.

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Table A2.2: Response to invitation, by letter type, people aged 25–74, 2021

		Response within 6 months	
Letter type	**Invitations**	**Number**	**Crude rate (%)**
A1	336,644	43,376	12.9
B1	391,467	22,853	5.8
C1	646,318	71,268	11.0
D1	354,445	18,445	5.2
Total	**1,728,874**	**155,942**	**9.0**

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. Invitation refers to the first invitation for a person that was not followed by a 'Return to Sender' notification; number refers to the number who had an HPV test within 6 months.

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Table A2.3: Response to invitation to screen or rescreen, by state and territory, people aged 25–74, 2021

		Response within 6 months	
State and territory	**Invitations**	**Number**	**Crude rate (%)**
NSW	594,467	46,729	7.9
Vic	424,737	39,932	9.4
Qld	332,596	32,341	9.7
WA	161,543	16,817	10.4
SA	103,219	9,955	9.6
Tas	30,649	3,649	11.9
ACT	29,246	2,791	9.5
NT	16,701	1,459	8.7
Australia	**1,728,874**	**155,942**	**9.0**

Note*:* Invitation refers to the first invitation for a person that was not followed by a 'Return to Sender' notification; number refers to the number who had an HPV test within 6 months.

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Table A2.4: Response to invitation, by year, people aged 25–74, 2018 to 2021

		Response within 6 months	
Year	**Invitations**	**Number**	**Crude rate (%)**
2018	15,293	3,852	25.2
2019	363,420	63,871	17.6
2020	167,416	21,290	12.7
2021	1,728,874	155,942	9.0

Note*:* Invitation refers to the first invitation for a person that was not followed by a 'Return to Sender' notification; number refers to the number who had an HPV test within 6 months.

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

A3 Rescreening

Table A3.1: Time to rescreen for participants who have previously had a Pap test, 25–69, screened in 2018

Time to rescreen	Number	Per cent
Less than 2 years	22,459	41.8
2 years (21–27 months)	9,323	17.4
More than 2 years	21,907	40.8

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Table A3.2: Time to rescreen for participants who have never had a Pap test, 25–69, screened in 2018

Time to rescreen	Number	Per cent
Less than 2 years	2,094	42.3
2 years (21–27 months)	758	15.3
More than 2 years	2,099	42.4

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

A4 Screening results

Table A4.1: Risk of a significant cervical abnormality, primary screening tests, by age, 2021

	Risk of a significant cervical abnormality							
	Low risk		Intermediate risk		Higher risk		No risk assigned	
Age group	Number	Crude rate (%)	Number	Crude rate (%)	Number	Crude rate (%)	Number	Crude rate (%)
<25	4,057	71.1	1,484	26.0	143	2.5	21	0.4
25–29	89,925	80.8	18,550	16.7	2,552	2.3	324	0.3
30–34	66,988	86.8	7,427	9.6	2,495	3.2	235	0.3
35–39	61,393	90.3	4,362	6.4	1,974	2.9	225	0.3
40–44	48,809	91.1	2,898	5.4	1,719	3.2	160	0.3
45–49	45,426	92.3	2,297	4.7	1,356	2.8	145	0.3
50–54	38,446	92.7	1,762	4.2	1,129	2.7	150	0.4
55–59	31,195	92.8	1,322	3.9	907	2.7	180	0.5
60–64	26,362	92.9	1,057	3.7	805	2.8	162	0.6
65–69	19,457	93.1	738	3.5	583	2.8	120	0.6
70–74	17,431	94.1	516	2.8	470	2.5	106	0.6
75+	1,789	93.1	57	3.0	63	3.3	13	0.7
25–74	**445,432**	**88.7**	**40,929**	**8.2**	**13,990**	**2.8**	**1,807**	**0.4**

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Table A4.2: Risk of a significant cervical abnormality, primary screening tests, by state and territory, participants aged 25–74, 2021

	Risk of a significant cervical abnormality							
	Low risk		Intermediate risk		Higher risk		No risk assigned	
State and territory	Number	Crude rate (%)	Number	Crude rate (%)	Number	Crude rate (%)	Number	Crude rate (%)
NSW	131,699	89.1	11,861	8.0	3,914	2.6	385	0.3
Vic	126,648	88.1	12,164	8.5	4,445	3.1	579	0.4
Qld	89,472	88.8	7,980	7.9	2,945	2.9	410	0.4
WA	46,116	88.9	4,320	8.3	1,263	2.4	162	0.3
SA	28,013	89.4	2,385	7.6	813	2.6	122	0.4
Tas	9,455	89.2	871	8.2	245	2.3	28	0.3
ACT	8,286	90.4	714	7.8	152	1.7	15	0.2
NT	5,160	86.1	549	9.2	181	3.0	101	1.7
Australia	**445,432**	**88.7**	**40,929**	**8.2**	**13,990**	**2.8**	**1,807**	**0.4**

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Table A4.3: Risk of a significant cervical abnormality, primary screening tests, by year, participants aged 25–74, 2018 to 2021

	Risk of a significant cervical abnormality							
	Low risk		Intermediate risk		Higher risk		No risk assigned	
Year	Number	Crude rate (%)	Number	Crude rate (%)	Number	Crude rate (%)	Number	Crude rate (%)
2018	1,442,368	91.0	98,516	6.2	39,507	2.5	4,061	0.3
2019	1,410,366	91.4	93,223	6.0	35,628	2.3	3,858	0.3
2020	595,020	89.4	50,642	7.6	18,367	2.8	1,811	0.3
2021	445,432	88.7	40,929	8.2	13,990	2.8	1,807	0.4

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

A5 Correlation

Table A5.1: Histology performed within 6 months of a primary screening test, participants aged 25–74 screened in 2020

Primary screening test result			Histology result				
HPV test	LBC test	No. tests	Negative	Low-grade	High-grade	Cancer	No result
Number of histology tests							
Not detected	Any	595,259	4,227	141	18	7	52
Not 16/18	Negative or low-grade	50,441	586	433	165	2	11
Not 16/18	High-grade or glandular	3,224	344	500	1,613	34	6
16/18	Negative or low-grade	12,314	2,144	1,743	723	19	48
16/18	High-grade or glandular	2,487	212	276	1,307	151	7
Proportion of cytology tests (%)							
Not detected	Any	595,259	95.1	3.2	0.4	0.2	1.2
Not 16/18	Negative or low-grade	50,441	49.0	36.2	13.8	0.2	0.9
Not 16/18	High-grade or glandular	3,224	13.8	20.0	64.6	1.4	0.2
16/18	Negative or low-grade	12,314	45.8	37.3	15.5	0.4	1.0
16/18	High-grade or glandular	2,487	10.9	14.1	66.9	7.7	0.4
Proportion of histology tests (%)							
Not detected	Any	595,259	56.3	4.6	0.5	3.3	41.9
Not 16/18	Negative or low-grade	50,441	7.8	14.0	4.3	0.9	8.9
Not 16/18	High-grade or glandular	3,224	4.6	16.2	42.2	16.0	4.8
16/18	Negative or low-grade	12,314	28.5	56.4	18.9	8.9	38.7
16/18	High-grade or glandular	2,487	2.8	8.9	34.2	70.9	5.6

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Table A5.2: 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 2020

Year	Number of high-grade LBC results	Number followed by high-grade cervical histology within 6 months	Proportion (%)
2018	8,924	5,961	66.8
2019	7,640	5,148	67.4
2020	4,444	3,108	69.9

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

A6 Screening HPV test positivity

Table A6.1: Screening HPV test positivity, by age and birth cohort, 2021

	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	78	1.4	1,560	27.4	1,638	28.7
25–29	1,624	1.5	19,619	17.6	21,243	19.1
30–34	1,894	2.5	8,127	10.6	10,021	13.0
35–39	1,589	2.3	4,809	7.1	6,398	9.4
40–44	1,486	2.8	3,178	5.9	4,664	8.7
45–49	1,204	2.4	2,497	5.1	3,701	7.5
50–54	1,044	2.5	1,906	4.6	2,950	7.1
55–59	824	2.5	1,484	4.4	2,308	6.9
60–64	745	2.6	1,197	4.2	1,942	6.9
65–69	549	2.6	832	4.0	1,381	6.6
70–74	439	2.4	600	3.2	1,039	5.6
75+	59	3.1	64	3.3	123	6.4
25–74	**11,398**	**2.3**	**44,249**	**8.8**	**55,647**	**11.1**
Age indicates were offered HPV vaccination[(a)]						
<25	78	1.4	1,560	27.4	1,638	28.7
25–29	1,624	1.5	19,619	17.6	21,243	19.1
30–34	1,894	2.5	8,127	10.6	10,021	13.0
35–39	1,589	2.3	4,809	7.1	6,398	9.4
40–44	291	2.5	729	6.4	1,020	8.9
Total	**5,476**	**2.0**	**34,844**	**12.8**	**40,320**	**14.8**
Age indicates were not offered HPV vaccination[(b)]						
40–44	1,195	2.8	2,449	5.8	3,644	8.7
45–49	1,204	2.4	2,497	5.1	3,701	7.5
50–54	1,044	2.5	1,906	4.6	2,950	7.1
55–59	824	2.5	1,484	4.4	2,308	6.9
60–64	745	2.6	1,197	4.2	1,942	6.9
65–69	549	2.6	832	4.0	1,381	6.6
70–74	439	2.4	600	3.2	1,039	5.6
75+	59	3.1	64	3.3	123	6.4
Total	**6,059**	**2.6**	**11,029**	**4.7**	**17,088**	**7.3**

(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 4.4 08/07/2022)

Table A6.2: Screening HPV test positivity, by state and territory and birth cohort, 2021

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	3,151	2.1	12,751	8.6	15,902	10.8
Vic	3,808	2.7	13,000	9.1	16,808	11.7
Qld	2,324	2.3	8,821	8.8	11,145	11.1
WA	973	1.9	4,680	9.0	5,653	10.9
SA	654	2.1	2,591	8.3	3,245	10.4
Tas	193	1.8	935	8.8	1,128	10.7
ACT	131	1.4	741	8.1	872	9.5
NT	141	2.4	632	10.6	773	13.0
Australia	**11,398**	**2.3**	**44,249**	**8.8**	**55,647**	**11.1**
Age indicates were offered HPV vaccination[(a)]						
NSW	1,573	2.0	9,641	12.3	11,214	14.3
Vic	1,621	2.1	9,927	12.6	11,548	14.7
Qld	1,102	2.1	6,407	12.5	7,509	14.6
WA	546	1.9	3,548	12.6	4,094	14.5
SA	323	2.0	1,926	11.8	2,249	13.8
Tas	83	1.5	696	12.9	779	14.5
ACT	74	1.4	584	11.1	658	12.5
NT	65	1.9	481	13.7	546	15.6
Australia	**5,476**	**2.0**	**34,844**	**12.8**	**40,320**	**14.8**
Age indicates were not offered HPV vaccination[(b)]						
NSW	1,578	2.3	3,110	4.5	4,688	6.8
Vic	2,187	3.4	3,073	4.7	5,260	8.1
Qld	1,222	2.5	2,414	4.9	3,636	7.4
WA	427	1.8	1,132	4.8	1,559	6.6
SA	331	2.2	665	4.4	996	6.7
Tas	110	2.1	239	4.6	349	6.7
ACT	57	1.5	157	4.0	214	5.5
NT	76	3.1	151	6.2	227	9.3
Australia	**6,059**	**2.6**	**11,029**	**4.7**	**17,088**	**7.3**

(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 4.4 08/07/2022).

Table A6.3: Screening HPV test positivity, by year and birth cohort, 2018 to 2021

	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	33,175	2.1	105,905	6.7	139,080	8.8
2019	30,174	2.0	99,962	6.5	130,136	8.4
2020	15,129	2.3	54,465	8.2	69,594	10.5
2021	11,398	2.3	44,249	8.8	55,647	11.1
Age indicates were offered HPV vaccination[(a)]						
2018	12,456	2.3	69,353	12.7	81,809	15.0
2019	11,153	2.0	64,511	11.7	75,664	13.8
2020	6,992	2.1	40,922	12.5	47,914	14.7
2021	5,476	2.0	34,844	12.8	40,320	14.8
Age indicates were not offered HPV vaccination[(b)]						
2018	21,171	2.0	44,103	4.1	65,274	6.1
2019	19,335	1.9	39,696	3.9	59,031	5.9
2020	8,348	2.4	15,823	4.5	24,171	6.9
2021	6,059	2.6	11,029	4.7	17,088	7.3

(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 4.4 08/07/2022).

A8 Self-collection people positive for oncogenic HPV (not 16/18) who have an LBC test within 6 months

Table A8.1: Proportion of participants who self-collected their sample and were positive for oncogenic HPV types other than 16 and 18 who had an LBC test within 6 months, participants aged 30–74, by year, 2018 to 2021

Year	Number self-collected positive for oncogenic HPV not 16/18	Number who had LBC test within 6 months	LBC test within 6 months (%)
2018	118	79	66.9
2019	256	154	60.2
2020	194	116	59.8
2021	327	195	59.6

Source*:* AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

A9 Self-collection people positive for oncogenic HPV 16/18 who have a colposcopy within 6 months

Table A9.1: Proportion of participants who self-collected their sample and were positive for oncogenic HPV type 16 or 18 who had a colposcopy within 6 months, participants aged 30–74, by year, 2018 to 2021

Year	Number self-collected positive for oncogenic HPV 16/18	Number who had colposcopy within 6 months	Colposcopy within 6 months (%)
2018	50	35	70.0
2019	104	66	63.5
2020	98	76	77.6
2021	130	89	68.5

Note*:* Number who had a colposcopy within 6 months for 2021 data may be an underestimate.

Source*:* AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

A10 Adherence to recommendation for follow-up

Table A10.1: Time to 12-month HPV test after an intermediate risk primary screening test, participants aged 25–74, screened in 2020

Time to repeat screen (months)	Number who had repeat HPV test	Cumulative number who had repeat HPV test	Cumulative per cent of participants who had intermediate risk primary screening test (%)
1	58	58	0.1
2	56	114	0.2
3	57	171	0.4
4	101	272	0.6
5	84	356	0.7
6	138	494	1.0
7	170	664	1.4
8	210	874	1.8
9	291	1,165	2.4
10	1,590	2,755	5.7
11	3,533	6,288	13.1
12	5,473	11,761	24.5
13	8,310	20,071	41.8
14	4,294	24,365	50.7
15	2,647	27,012	56.2
16	2,021	29,033	60.4
17	2,459	31,492	65.6
18	1,499	32,991	68.7
19	934	33,925	70.6
20	967	34,892	72.6
21	2,119	37,011	77.1
Did not have repeat HPV test	11,024	48,035	100.0

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Table A10.2: Adherence to recommendation for follow-up, by age, 2020

Age group	Number who had repeat HPV test 9–15 months after primary screening test	Adherence to recommendation for follow-up rate (%)
<25	901	47.0
25–29	10,942	55.2
30–34	4,763	51.2
35–39	2,792	50.3
40–44	1,947	51.6
45–49	1,668	52.3
50–54	1,250	53.4
55–59	1,056	58.3
60–64	819	62.1
65–69	565	64.9
70–74	45	59.2
75+	4	66.7
25–74	**25,847**	**53.8**

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Table A10.3: Adherence to recommendation for follow-up by state and territory, participants aged 25–74, 2020

State and territory	Number who had repeat HPV test 9–15 months after primary screening test	Adherence to recommendation for follow-up rate (%)
NSW	7,546	51.3
Vic	6,981	55.9
Qld	5,337	53.6
WA	2,723	54.0
SA	1,730	59.0
Tas	559	58.2
ACT	531	57.9
NT	294	45.6
Australia	**25,847**	**53.8**

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Table A10.4: Adherence to recommendation for follow-up by year, participants aged 25–74, 2018 to 2020

Year	Number who had repeat HPV test 9–15 months after primary screening test	Adherence to recommendation for follow-up rate (%)
2018	53,693	57.9
2019	51,982	58.4
2020	25,847	53.8

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

A11 Follow up results

Table A11.1: Risk of a significant cervical abnormality, repeat screening tests, by age, 2021

	Risk of a significant cervical abnormality							
	Low risk		Intermediate risk		Higher risk		No risk assigned	
Age group	Number	Crude rate (%)	Number	Crude rate (%)	Number	Crude rate (%)	Number	Crude rate (%)
<25	3,268	44.3	3,773	51.1	284	3.8	52	0.7
25–29	13,168	41.8	16,145	51.3	2,003	6.4	154	0.5
30–34	11,140	44.4	11,250	44.8	2,561	10.2	148	0.6
35–39	7,498	45.6	6,689	40.7	2,184	13.3	80	0.5
40–44	5,469	45.9	4,496	37.7	1,897	15.9	59	0.5
45–49	4,872	46.9	3,782	36.4	1,677	16.2	51	0.5
50–54	4,193	46.2	3,322	36.6	1,491	16.4	66	0.7
55–59	3,137	39.2	3,217	40.2	1,521	19.0	118	1.5
60–64	2,492	35.7	2,817	40.4	1,535	22.0	131	1.9
65–69	1,714	32.3	2,260	42.5	1,232	23.2	106	2.0
70–74	1,096	34.6	1,217	38.5	798	25.2	53	1.7
75+	250	33.2	290	38.6	199	26.5	13	1.7
25–74	**54,779**	**42.8**	**55,195**	**43.2**	**16,899**	**13.2**	**966**	**0.8**

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 repeat screening 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 4.4 08/07/2022).

Table A11.2: Risk of a significant cervical abnormality, repeat screening tests, by state and territory, participants aged 25–74, 2021

	Risk of a significant cervical abnormality							
	Low risk		Intermediate risk		Higher risk		No risk assigned	
State and territory	Number	Crude rate (%)	Number	Crude rate (%)	Number	Crude rate (%)	Number	Crude rate (%)
NSW	15,910	39.7	17,656	44.0	6,305	15.7	236	0.6
Vic	13,752	42.6	14,891	46.1	3,340	10.3	306	0.9
Qld	11,494	49.1	8,898	38.0	2,797	11.9	231	1.0
WA	6,942	42.4	7,095	43.3	2,276	13.9	76	0.5
SA	2,780	34.9	3,750	47.1	1,377	17.3	50	0.6
Tas	1,487	56.8	909	34.7	204	7.8	18	0.7
ACT	1,552	49.7	1,241	39.8	301	9.6	26	0.8
NT	790	44.2	689	38.6	285	16.0	22	1.2
Australia	**54,779**	**42.8**	**55,195**	**43.2**	**16,899**	**13.2**	**966**	**0.8**

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 repeat screening 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 4.4 08/07/2022).

A12 Colposcopy rate

Table A12.1: Colposcopy rate, by age, 2020

	Screening test result					
	Primary screening test HPV 16/18		Primary screening test (not 16/18) + any high-grade/glandular LBC		Repeat screening test HPV (any)	
Age group	Number of colposcopies	Colposcopy rate (%)	Number of colposcopies	Colposcopy rate (%)	Number of colposcopies	Colposcopy rate (%)
<25	73	48.7	60	70.6	2,263	43.1
25–29	1,119	53.3	876	75.0	9,317	47.0
30–34	1,617	62.3	580	75.3	7,338	50.9
35–39	1,349	62.7	360	78.8	5,004	53.7
40–44	1,226	64.4	243	82.7	3,793	54.5
45–49	1,132	64.2	178	86.0	3,356	53.9
50–54	859	65.3	85	73.3	2,909	54.4
55–59	802	65.1	68	80.0	2,896	55.4
60–64	644	64.8	44	75.9	2,724	55.8
65–69	463	68.0	43	84.3	2,160	56.2
70–74	235	66.8	13	86.7	1,031	58.8
75+	35	57.4	2	66.7	152	50.3
25–74	**9,446**	**62.6**	**2,490**	**77.3**	**40,528**	**52.1**

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Table A12.2: Colposcopy rate, by state and territory, participants aged 25–74, 2020

	Screening test result					
	Primary screening test HPV 16/18		Primary screening test (not 16/18) + any high-grade/glandular LBC		Repeat screening test HPV (any)	
State and territory	Number of colposcopies	Colposcopy rate (%)	Number of colposcopies	Colposcopy rate (%)	Number of colposcopies	Colposcopy rate (%)
NSW	3,074	66.0	808	79.9	13,620	54.4
Vic	2,881	66.8	572	74.7	9,587	51.2
Qld	1,833	57.3	588	79.8	7,679	52.1
WA	720	56.6	229	68.6	4,944	49.5
SA	514	53.6	165	84.2	2,563	50.8
Tas	131	60.6	44	80.0	714	50.9
ACT	154	78.6	34	64.2	839	55.2
NT	95	47.5	26	78.8	431	44.0
Australia	**9,446**	**62.6**	**2,490**	**77.3**	**40,528**	**52.1**

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Table A12.3 Colposcopy rate, by year, participants aged 25–74, 2018 to 2020

	Screening test result					
	Primary screening test HPV 16/18		Primary screening test (not 16/18) + any high-grade/glandular LBC		Repeat screening test HPV (any)	
Year	Number of colposcopies	Colposcopy rate (%)	Number of colposcopies	Colposcopy rate (%)	Number of colposcopies	Colposcopy rate (%)
2018	20,582	62.7	4,788	76.5	10,215	53.2
2019	18,198	60.6	4,107	75.7	30,757	51.0
2020	9,446	62.6	2,490	77.3	40,528	52.1

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

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 test result, participants aged 25–74, 2020

	Screening test result							
	Primary screening test HPV 16/18		Primary screening test (not 16/18) + any high-grade/glandular LBC		Repeat screening test HPV (any)		Total	
Time to colposcopy (weeks)	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
4	3,111	20.6	874	27.3	15,270	20.1	19,255	20.4
8	6,867	45.5	1,929	60.2	29,167	38.4	37,963	40.3
12	9,003	59.7	2,398	74.8	37,820	49.8	49,221	52.2
26	11,889	78.8	2,838	88.5	50,542	66.5	65,269	69.2
Not performed	15,091	100.0	3,206	100.0	76,016	100.0	94,313	100.0

Note: Data shown for time to colposcopy are cumulative number and per cent.

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Table A13.2: Time to colposcopy in days, by age, 2020

	Screening test result							
	Primary screening test HPV 16/18		Primary screening test (not 16/18) + any high-grade/glandular LBC		Repeat screening test HPV (any)		Total	
Age group	Median days	90th percentile	Median days	90th percentile	Median days	90th percentile	Median days	90th percentile
<25	64	316	45	156	74	386	72	382
25–29	63	229	48	141	71	389	69	361
30–34	54	225	44	131	64	353	61	315
35–39	55	218	40	141	60	329	57	297
40–44	52	226	41	124	61	341	57	294
45–49	58	227	39	93	62	346	60	302
50–54	59	221	52	189	63	356	62	316
55–59	61	222	50	141	65	370	63	342
60–64	59	235	42	151	63	368	63	339
65–69	55	234	36	142	63	378	61	356
70–74	58	245	41	69	59	378	58	363
75+	51	293	27	38	52	427	51	420
25–74	**57**	**227**	**44**	**138**	**65**	**363**	**62**	**325**

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Table A13.3: Time to colposcopy in days, by state and territory, participants aged 25–74, 2020

	Screening test result							
	Primary screening test HPV 16/18		Primary screening test (not 16/18) + any high-grade/glandular LBC		Repeat screening test HPV (any)		Total	
State and territory	Median days	90th percentile	Median days	90th percentile	Median days	90th percentile	Median days	90th percentile
NSW	48	210	41	122	58	321	55	287
Vic	57	218	47	143	63	413	61	383
Qld	64	213	41	133	71	258	69	244
WA	66	234	51	147	71	392	70	363
SA	70	342	42	115	73	394	70	383
Tas	62	250	45	119	75	330	69	305
ACT	45	122	46	279	55	401	53	386
NT	83	360	40	112	78	401	77	387
Australia	**57**	**227**	**44**	**138**	**65**	**363**	**62**	**325**

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Table A13.4: Time to colposcopy in days, by year, participants aged 25–74, 2018 to 2020

	Screening test result							
	Primary screening test HPV 16/18		Primary screening test (not 16/18) + any high-grade/glandular LBC		Repeat screening test HPV (any)		Total	
Year	Median days	90th percentile	Median days	90th percentile	Median days	90th percentile	Median days	90th percentile
2018	59	246	45	151	64	431	58	286
2019	63	261	48	147	74	391	67	341
2020	57	227	44	138	65	363	62	325

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

A14 Biopsy rate

Table A14.1: Biopsy rate, by age, 2021

Age group	Number	Biopsy rate (%)
<25	2,935	47.8
25–29	9,322	49.7
30–34	8,257	45.9
35–39	6,185	43.6
40–44	4,826	42.1
45–49	3,582	37.7
50–54	2,822	32.6
55–59	2,104	28.0
60–64	1,660	24.4
65–69	1,119	21.5
70–74	771	19.5
75+	253	15.4
25–74	**40,648**	**39.1**

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Table A14.2: Biopsy rate, by state and territory, participants aged 25–74, 2021

State and territory	Number	Biopsy rate (%)
NSW	11,508	40.6
Vic	10,582	41.7
Qld	9,919	41.4
WA	4,191	37.2
SA	2,512	27.8
Tas	754	32.0
ACT	503	30.4
NT	378	30.5
Australia	**40,648**	**39.1**

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Table A14.3: Biopsy rate, by year, participants aged 25–74, 2018 to 2021

Year	Number	Biopsy rate (%)
2018	39,862	43.3
2019	50,937	42.7
2020	51,102	41.4
2021	40,648	39.1

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

A15 Yield of high-grade abnormalities on biopsy among people 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, 2020

Age group	Number	Yield (%)
25–29	3,066	20.6
30–34	2,873	22.5
35–39	2,012	22.6
40–44	1,379	19.8
45–49	867	14.3
50–54	507	10.2
55–59	371	7.6
60–64	291	6.6
65–69	173	5.0
70–74	77	4.8
25–74	**11,616**	**16.9**

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Table A15.2: Yield of high-grade abnormalities on biopsy among participants who attend colposcopy after higher risk screening results, by year, participants aged 25–74, 2018 to 2020

Year	Number	Yield (%)
2018	9,716	24.1
2019	12,823	19.1
2020	11,616	16.9

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

A16 Positive predictive value of colposcopy

Table A16.1: Positive predictive value of colposcopy, by age, 2020

Age group	Number	Positive predictive value (%)
25–29	1,376	60.9
30–34	1,421	64.5
35–39	946	67.2
40–44	624	67.0
45–49	357	61.9
50–54	174	62.1
55–59	91	54.2
60–64	73	57.9
65–69	32	39.0
70–74	10	37.0
25–74	**5,104**	**63.3**

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Table A16.2: Positive predictive value of colposcopy, by year, participants aged 25–74, 2018 to 2020

Year	Number	Positive predictive value (%)
2018	5,249	65.5
2019	6,174	64.9
2020	5,104	63.3

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

A17 High-grade cervical abnormality detection rate & cervical cancer detection rate

Table A17.1: High-grade cervical abnormality detection, by age, 2021

Age group	Number participants with high-grade abnormality detected	Number screened	Number participants with high-grade abnormality detected per 1,000 participants screened
<25	656	38,530	17.0
25–29	3,623	180,726	20.0
30–34	3,566	144,100	24.7
35–39	2,630	124,181	21.2
40–44	1,873	99,559	18.8
45–49	1,136	90,479	12.6
50–54	678	76,769	8.8
55–59	498	60,956	8.2
60–64	395	49,830	7.9
65–69	239	36,475	6.6
70–74	136	28,917	4.7
75+	47	7,056	6.7
25–74	**14,774**	**891,992**	**16.6**
All ages	**15,477**	**937,786**	**16.5**

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 4.4 08/07/2022).

Table A17.2: Number with high-grade abnormality detected, by histological type, by age, 2021

Age group	CIN NOS	CIN2	CIN3	Endocervical dysplasia	AIS	Mixed CIN3/AIS
25–29	173	1,463	1,933	4	21	29
30–34	165	1,145	2,128	9	69	50
35–39	102	763	1,594	10	108	53
40–44	91	561	1,106	6	73	36
45–49	66	343	656	9	43	19
50–54	52	223	371	1	21	10
55–59	46	132	300	2	12	6
60–64	44	100	240	1	7	3
65–69	23	58	151	0	5	2
70–74	15	34	85	1	0	1
25–74	**777**	**4,822**	**8,564**	**43**	**359**	**209**

Source: AIHW analysis of NCSR data (NCSR RDE 4.4 08/07/2022).

Table A17.3: High-grade cervical abnormality detection, by state and territory, participants aged 25–74, 2021

State and territory	Number participants with high-grade abnormality detected	Number screened	Number participants with high-grade abnormality detected per 1,000 participants screened	
			Crude rate	AS rate
NSW	4,446	274,799	16.2	14.6
Vic	3,174	224,906	14.1	12.8
Qld	3,785	190,823	19.8	18.1
WA	1,624	95,348	17.0	14.9
SA	957	58,894	16.2	15.3
Tas	333	19,049	17.5	16.7
ACT	216	16,638	13.0	11.5
NT	158	10,248	15.4	13.5
Australia	**14,774**	**891,992**	**16.6**	**15.0**

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 4.4 08/07/2022).

Table A17.4: High-grade cervical abnormality detection rate, participants aged 25–74, 2018 to 2021

Year	Number participants with high-grade abnormality detected	Number screened	Number participants with high-grade abnormality detected per 1,000 participants screened	
			Crude rate	AS rate
2018	15,352	1,866,841	8.2	8.0
2019	18,242	1,904,277	9.6	9.4
2020	17,444	1,056,661	16.5	14.8
2021	14,774	891,992	16.6	15.0

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 4.4 08/07/2022).

Table A17.5: Cervical cancer detection rate, by age, 2021

Age group	Number participants with cervical cancer detected	Number screened	Number participants with cervical cancer detected per 1,000 participants screened
<25	0	38,530	0.0
25–29	34	180,726	0.2
30–34	89	144,100	0.6
35–39	155	124,181	1.2
40–44	127	99,559	1.3
45–49	117	90,479	1.3
50–54	85	76,769	1.1
55–59	75	60,956	1.2
60–64	76	49,830	1.5
65–69	57	36,475	1.6
70–74	36	28,917	1.2
75+	46	7,056	6.5
25–74	**851**	**891,992**	**1.0**
All ages	**897**	**937,786**	**1.0**

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 4.4 08/07/2022).

A19 Incidence of cervical cancer

Table A19.1: Cervical cancer incidence, by age, 2018

Age group	New cases	Crude rate
25–29	44	4.7
30–34	122	13.0
35–39	135	15.6
40–44	121	15.1
45–49	138	16.1
50–54	74	9.5
55–59	72	9.2
60–64	56	8.0
65–69	49	7.9
70–74	41	7.9
25–74	**851**	**10.9**
Total	**936**	**7.4**

Note*:* Crude rate is number of new cases of cervical cancer per 100,000 females.

Source*:* AIHW Australian Cancer Database 2018.

Table A19.2: Cervical cancer incidence, by state and territory, women aged 25–74, 2014–2018

State and territory	New cases	Crude rate	AS rate
NSW	1,172	9.8	9.9
Vic	928	9.6	9.9
Qld	944	12.6	13.1
WA	411	10.4	10.6
SA	261	9.8	10.2
Tas	109	13.3	14.7
ACT	61	9.6	9.8
NT	41	11.1	11.2
Australia	**3,927**	**10.4**	**10.7**

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

Source*:* AIHW Australian Cancer Database 2018.

Table A19.3: Cervical cancer incidence, by remoteness area, women aged 25–74, 2014–2018

Remoteness area	New cases	Crude rate	AS rate
Major cities	2,666	9.9	10.1
Inner regional	777	11.5	12.2
Outer regional	369	11.5	12.4
Remote	58	12.6	13.0
Very remote	49	18.5	18.7
Australia	**3,927**	**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. Age-standardised (AS) rate is the number of new cases of cervical cancer per 100,000 females, age-standardised to the Australian population as at 30 June 2001.

Source: AIHW Australian Cancer Database 2018.

Table A19.4: Cervical cancer incidence, by socioeconomic area, women aged 25–74, 2014–2018

Socioeconomic area	New cases	Crude rate	AS rate
1 (most disadvantaged)	848	12.1	12.6
2	810	10.9	11.2
3	826	10.8	11.2
4	772	9.9	10.1
5 (least disadvantaged)	661	8.6	8.7
Australia	**3,927**	**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. Age-standardised (AS) rate is the number of new cases of cervical cancer per 100,000 females age-standardised to the Australian population as at 30 June 2001.

Source: AIHW Australian Cancer Database 2018.

Table A19.5: Cervical cancer incidence, by Indigenous status, women aged 25–74, 2014–2018

Indigenous status	New cases	Crude rate	AS rate
Indigenous Australians	161	19.4	19.8
Non-Indigenous Australians	3,097	9.5	9.7
Not stated	238	. .	. .
All Australians	**3,496**	**10.4**	**10.7**

Notes

1. Data shown are for New South Wales, Victoria, Queensland, Western Australia, 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. Age-standardised (AS) rate is the number of new cases of cervical cancer per 100,000 females, age-standardised to the Australian population as at 30 June 2001.

Source: AIHW Australian Cancer Database 2018.

Table A19.6: Incidence of cervical cancer, by year, 1982 to 2018

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	871	831	968	21.0	18.2	12.7	21.2	19.1	14.3
1983	906	846	999	21.4	18.2	13.0	21.7	19.1	14.4
1984	894	843	1,018	20.7	17.8	13.0	20.8	18.6	14.3
1985	944	901	1,064	21.5	18.8	13.5	21.8	19.6	14.7
1986	916	864	1,024	20.4	17.7	12.8	20.9	18.7	14.0
1987	974	911	1,105	21.2	18.3	13.6	21.2	18.8	14.5
1988	939	903	1,069	20.0	17.7	12.9	20.0	18.1	13.6
1989	963	912	1,077	20.0	17.5	12.8	20.2	18.1	13.6
1990	979	929	1,099	20.0	17.5	12.8	20.3	18.2	13.6
1991	968	900	1,098	19.4	16.7	12.7	19.6	17.3	13.3
1992	908	848	1,026	17.9	15.5	11.7	18.1	16.0	12.2
1993	901	846	1,014	17.5	15.3	11.5	17.8	15.8	11.9
1994	997	938	1,145	19.1	16.7	12.8	19.1	17.1	13.1
1995	850	784	970	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	699	665	817	12.7	11.4	8.8	12.8	11.6	8.9
1998	746	704	877	13.4	11.9	9.4	13.4	12.0	9.3
1999	705	669	808	12.5	11.2	8.5	12.5	11.2	8.4
2000	653	604	775	11.4	10.0	8.1	11.4	10.0	7.9
2001	622	591	743	10.7	9.7	7.6	10.7	9.6	7.5
2002	586	566	698	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	602	589	732	10.0	9.2	7.3	10.0	9.2	7.1
2005	627	611	744	10.3	9.4	7.3	10.2	9.4	7.1
2006	617	596	728	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	793	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	711	689	824	10.6	9.6	7.4	10.6	9.7	7.2
2011	713	687	800	10.4	9.5	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	719	707	817	10.1	9.4	7.0	10.3	9.6	6.8
2014	803	773	896	11.1	10.1	7.6	11.2	10.3	7.4
2015	728	703	823	9.9	9.1	6.9	10.1	9.3	6.7
2016	803	767	894	10.7	9.7	7.3	10.9	9.9	7.2
2017	742	714	838	9.7	8.9	6.8	10.0	9.2	6.6
2018	851	815	936	10.9	10.0	7.4	11.3	10.4	7.3

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.

Source: AIHW Australian Cancer Database 2018.

Table A19.7: Five-year relative survival from cervical cancer, by age, 2014–2018

Age group	5-year relative survival (%)
20–24	91.7
25–29	91.5
30–34	90.8
35–39	87.1
40–44	84.4
45–49	78.5
50–54	71.2
55–59	63.5
60–64	70.2
65–69	59.0
70–74	47.6
25–74	**78.2**
All ages	**74.2**

Note: Relative survival was calculated with the period method, using the period 2014–2018 (Brenner and Gefeller 1996).

Source*:* AIHW Australian Cancer Database 2018.

Table A19.8: Trend in 5-year relative survival from cervical cancer in women aged 25–74, 1984–1988 to 2014–2018

Year	5-year relative survival (%)
1984–1988	71.5
1989–1993	74.5
1994–1998	76.8
1999–2003	76.0
2004–2008	76.9
2009–2013	76.1
2014–2018	78.2

Note: Relative survival was calculated with the period method, using the period 2014–2018 (Brenner and Gefeller 1996).

Source*:* AIHW Australian Cancer Database 2018.

Table A19.9: Relative survival at diagnosis and 5-year conditional survival from cervical cancer in women aged 25–74, 2014–2018

	Relative survival	Conditional survival	
Years after diagnosis	Relative survival (%)	Years already survived	5-year conditional relative survival (%)
1	91.8	. .	. .
2	85.8	. .	. .
3	82.0	. .	. .
4	79.6	. .	. .
5	78.2	0	78.2
6	77.5	1	84.4
7	76.3	2	88.9
8	75.5	3	92.0
9	74.8	4	93.9
10	74.1	5	94.8
11	73.7	6	95.1
12	73.1	7	95.9
13	72.8	8	96.4
14	72.2	9	96.5
15	72.0	10	97.1
16	71.7	11	97.3
17	71.2	12	97.3
18	70.7	13	97.1
19	70.2	14	97.3
20	70.0	15	97.2

Note: Relative survival was calculated with the period method, using the period 2014–2018 (Brenner and Gefeller 1996).

Source: AIHW Australian Cancer Database 2018.

A20 Mortality from cervical cancer

Table A20.1: Cervical cancer mortality, by age, 2020

Age group	Deaths	Crude rate
25–29	1	0.1
30–34	9	0.9
35–39	13	1.4
40–44	24	2.9
45–49	26	3.1
50–54	24	3.0
55–59	18	2.3
60–64	21	2.8
65–69	10	1.5
70–74	19	3.4
25–74	**165**	**2.0**
All ages	**209**	**1.6**

Notes

1. Deaths in 2020 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. 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, 2016–2020

State and territory	Deaths	Crude rate	AS rate
NSW	242	2.0	1.9
Vic	202	2.0	2.0
Qld	212	2.7	2.7
WA	97	2.4	2.3
SA	77	2.8	2.7
Tas	22	2.6	2.8
ACT	12	1.8	n.p.
NT	13	3.5	n.p.
Australia	**877**	**2.3**	**2.2**

Notes

1. Deaths from 2016 to 2019 were derived by year of death; deaths in 2020 were derived by year of registration of death. Deaths registered in 2017 and earlier are based on the final version of cause of death data; deaths registered in 2018 are based on the revised version; and deaths registered in 2019 and 2020 are based on the preliminary version. 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. Age-standardised (AS) rate is the number of deaths from cervical cancer per 100,000 females, 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, 2016–2020

Remoteness area	Deaths	Crude rate	AS rate
Major cities	566	2.0	2.0
Inner regional	170	2.5	2.3
Outer regional	102	3.2	3.2
Remote and very remote	30	4.2	4.0
Australia	**877**	**2.3**	**2.2**

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 2016 to 2019 were derived by year of death; deaths in 2020 were derived by year of registration of death. Deaths registered in 2017 and earlier are based on the final version of cause of death data; deaths registered in 2018 are based on the revised version; and deaths registered in 2019 and 2020 are based on the preliminary version. 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. Age-standardised (AS) rate is the number of deaths from cervical cancer per 100,000 females, 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, 2016–2020

Socioeconomic area	Deaths	Crude rate	AS rate
1 (most disadvantaged)	266	3.6	3.5
2	197	2.6	2.5
3	162	2.1	2.0
4	137	1.7	1.7
5 (least disadvantaged)	106	1.3	1.3
Australia	**877**	**2.3**	**2.2**

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 2016 to 2019 were derived by year of death; deaths in 2020 were derived by year of registration of death. Deaths registered in 2017 and earlier are based on the final version of cause of death data; deaths registered in 2018 are based on the revised version; and deaths registered in 2019 and 2020 are based on the preliminary version. 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. Age-standardised (AS) rate is the number of deaths from cervical cancer per 100,000 females, age-standardised to the Australian population as at 30 June 2001.

Source: AIHW National Mortality Database.

Table A20.5: Cervical cancer mortality, by Indigenous status, women aged 25–74, 2016–2020

Indigenous status	Deaths	Crude rate	AS rate
Indigenous Australians	62	7.2	7.9
Non-Indigenous Australians	573	2.2	2.1
Not stated	6	. .	. .
All Australians	**641**	**2.3**	**2.3**

Notes

1. Data shown 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 2016 to 2019 were derived by year of death; deaths in 2020 were derived by year of registration of death. Deaths registered in 2017 and earlier are based on the final version of cause of death data; deaths registered in 2018 are based on the revised version; and deaths registered in 2019 and 2020 are based on the preliminary version. 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. Age-standardised (AS) rate is the number of deaths from cervical cancer per 100,000 females, age-standardised to the Australian population as at 30 June 2001.

Source*:* AIHW National Mortality Database.

Table A20.6: Cervical cancer mortality, by year, 1982 to 2020

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	194	170	256	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 A20.6 (continued): Cervical cancer mortality, by year, 1982 to 2020

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	223	2.2	1.9	1.7	2.2	1.8	1.6
2020	165	146	209	2.0	1.8	1.6	2.0	1.8	1.5

Notes

1. Deaths from 1982 to 2019 were derived by year of death; deaths in 2020 were derived by year of registration of death. Deaths registered in 2017 and earlier are based on the final version of cause of death data; deaths registered in 2018 are based on the revised version; and deaths registered in 2019 and 2020 are based on the preliminary version. 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. Age-standardised (AS) rate is 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.

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 two recent reports: *Impact evaluation of Australian national human papillomavirus vaccination program* (National Centre for Immunisation Research and Surveillance 2021) 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. There 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.
- 2016–2020 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. 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).

National HPV vaccination coverage for girls turning 15 years of age is high and increasing, with a first-dose coverage of 86.6% and a final-dose coverage rate of 80.5% in 2020.

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

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 2021; NHMRC Centre of Research Excellence in Cervical Cancer Control 2021.

Appendix C: Data sources

The multiple data sources used for this report are summarised in Table C1.

Table C1: Data sources for National Cervical Screening Program monitoring report 2022

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	National Cancer Screening Register
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 Self-collection people positive for oncogenic HPV (not 16/18) who have an LBC test within 6 months	National Cancer Screening Register
Performance indicator 9 Self-collection people positive for oncogenic HPV 16/18 who have a colposcopy within 6 months	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 people 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 1.1* (AIHW 2022b).

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 people 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 tests data not notified to the NCSR will not be included in the NCSR or in the data included in this report. Cervical tests for 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 2022 raw data extract (RDE) of version 4.4 of the NCSR (NCSR RDE 4.4 08/07/2022).

The Data Quality Statement for National Cancer Screening Program data can be found on the AIHW website at https://meteor.aihw.gov.au/content/756294.

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 2018 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 2018 can be found at https://meteor.aihw.gov.au/content/757686.

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 2020. 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 (2020), 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 2017 and earlier are based on the final version of cause of death data; deaths registered in 2018 are based on the revised version; and deaths registered in 2019 and 2020 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/2020
- ABS quality declaration summary for Causes of death, Australia https://www.abs.gov.au/methodologies/causes-death-australia-methodology/2020

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.

Aboriginal and Torres Strait Islander deaths

The ABS Death Registrations collection identifies a death as Aboriginal and Torres Strait Islander 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 the tool 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 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 people 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, people aged 25–74, 2016

Age group (years)	Proportion of people 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 people are included in the data.

State and territory

The State and territory reported is the one where the person resides or where an invitation was sent (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, people 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 people may not represent their location of usual residence; secondly, as these are based on the 2016 Census, the accuracy of remoteness area classifications diminishes, due to subsequent changes in demographics; thirdly, some postcodes (and hence some 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 people 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, people 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 people may not represent their location of residence; secondly, as these are based on the 2016 Census, the accuracy of socioeconomic area classifications diminishes due to subsequent changes in demographics; thirdly, many postcodes (and hence people) are unable to be allocated to a socioeconomic area.

Culturally and linguistically diverse

Participation is not measured for culturally and linguistically diverse (CALD) people 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 82% of participants aged 25–74 who had a screening HPV test in 2018–2021, and the 'Country of birth' field was not populated for 68% (Table A1.6).

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 Indigenous people and other 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
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 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.

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 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.

repeat (follow-up) screening episode: Encompasses a follow-up HPV test (repeat HPV test after negative or pLSIL/LSIL reflex LBC) and an LBC if this is required. Usually occurs at 12 months (or between 9 and 15 months) after the primary screening episode.

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.

References

ABS (Australian Bureau of Statistics) (2018) *Estimates of Aboriginal and Torres Strait Islander Australians*, June 2016, ABS catalogue number 3238.0.55.001, ABS website, accessed 23 May 2022. https://www.abs.gov.au/statistics/people/aboriginal-and-torres-strait-islander-peoples/estimates-aboriginal-and-torres-strait-islander-australians/jun-2021

ABS (2021) *National, state and territory population*, June 2021, ABS website, accessed 23 May 2022. https://www.abs.gov.au/statistics/people/population/national-state-and-territory-population/jun-2021

AIHW (Australian Institute of Health and Welfare) (2018) *Analysis of cancer outcomes and screening behaviour for national cancer screening programs in Australia*, Cancer series number 111, catalogue number CAN 115, AIHW, Australian Government.

AIHW (2019) *Analysis of cervical cancer and abnormality outcomes in an era of cervical screening and HPV vaccination in Australia*, Cancer series number 126, 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 (2022a) *Aboriginal and Torres Strait Islander specific primary health care: results from the nKPI and OSR collections*, catalogue number IHW 227, AIHW, Australian Government, accessed 23 June 2022. https://www.aihw.gov.au/reports/indigenous-australians/indigenous-primary-health-care-results-osr-nkpi

AIHW (2022b) *National Cervical Screening Program data dictionary version 1.1*, catalogue number CAN 146, AIHW, Australian Government.

AIHW (2022c) *Cancer data in Australia*, catalogue number CAN 122, AIHW, Australian Government, accessed 9 September 2022. https://www.aihw.gov.au/reports/cancer/cancer-data-in-australia/contents/about

Blomfield P and Saville M (2008) Outstanding problems—glandular lesions, *Cancer Forum* 32(2), accessed 29 March 2019. https://www.cancer.org.au/content/healthprofessional/CancerForum/issues/2008-July.pdf

Bray F, Ferlay J, Soerjomataram I, Siegel RL, Torre LA, Jemal A (2018) Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries, *CA: A Cancer Journal for Clinicians* 68(6): 394–424.

Brenner H, Gefeller O (1996) An alternative approach to monitoring cancer patient survival, *Cancer*, 78(9): 2004–2010.

Brotherton JM (2008) How much cervical cancer in Australia is vaccine preventable? A meta-analysis, *Vaccine* 26(2): 250–256.

Brotherton JML, Tabrizi SN, Phillips S, Pyman J, Cornall AM, Lambie N, Anderson L, Cummings M, Payton D, Scurry JP, Newman M, Sharma R, Saville M, Garland SM (2017) Looking beyond human papillomavirus (HPV) genotype 16 and 18: defining HPV genotype distribution in cervical cancers in Australia before vaccination, *International Journal of Cancer* 141(8):1576–1584, doi:10.1002/ijc.30871.

Brotherton JM, Budd AC, Saville M (2020) Understanding the proportion of cervical cancers attributable to HPV, *Medical Journal of Australia* 212(2): 63–64, doi: 10.5694/mja2.50477.

Brotherton JML, Hendry A, Dey A, Hull BP and Beard F (2022) HPV vaccination coverage: slightly improved two-dose schedule completion estimates and historical estimates lower on AIR than HPV Register, *Australian and New Zealand Journal of Public Health*, 46: 394–400, doi.org/10.1111/1753-6405.13233.

Brotherton JM, Hawkes D, Sultana F, Malloy MJ, Machalek DA, Smith MA, Garland SM, Saville M (2019) Age-specific HPV prevalence among 116,052 women in Australia's renewed cervical screening program: a new tool for monitoring vaccine impact, *Vaccine* 37(3): 412–416, doi: 10.1016/j.vaccine.2018.11.075.

Cancer Council Australia (2014) *Cervical cancer prevention policy—cervical cancer: causes*, Cancer Council Australia, Sydney, accessed 14 April 2015. https://wiki.cancer.org.au/policy

Cancer Council Australia and Cervical Cancer Screening Guidelines Working Party (2016) *National Cervical Screening Program: guidelines for the management of screen-detected abnormalities, screening in specific populations and investigation of abnormal vaginal bleeding*, Cancer Council Australia, Sydney, accessed 1 April 2019, https://wiki.cancer.org.au/australia/Guidelines:Cervical_cancer/Screening

Chhieng D and Hui P (eds) (2011) *Cytology and surgical pathology of gynecologic neoplasms*, Humana Press, Valley Stream NY.

Curado MP, Edwards B, Shin HR, Storm H, Ferlay J, Heanue M, Boyle P (eds) (2007) *Cancer incidence in five continents: vol. IX*, IARC Scientific Publications number 160, International Agency for Research on Cancer (IARC), Lyon, France.

Dasgupta P, Aitken JF, Condon J, Garvey G, Whop LJ, DeBats C, Baade PD (2020) Spatial and temporal variations in cervical cancer screening participation among indigenous and non-indigenous women, Queensland, Australia, 2008–2017, *Cancer Epidemiology* 69: 101849, doi.org/10.1016/j.canep.2020.101849.

Department of Health (2020a) *What you need to know about coronavirus (COVID-19)*, Department of Health, Australian Government, accessed 22 January 2021. https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/what-you-need-to-know-about-coronavirus-covid-19

Department of Health (2020b) *Historical data from the National HPV Vaccination Program Register*, Department of Health, Australian Government, accessed 9 September 2022. https://www.health.gov.au/resources/collections/historical-data-from-the-national-hpv-vaccination-program-register

Hall MT, Simms KT, Lew JB, Smith MA, Brotherton JM, Saville M, Frazer IH, Canfell K (2019) The projected timeframe until cervical cancer elimination in Australia: a modelling study, *Lancet Public Health* 4(1):e19–e27, doi: 10.1016/S2468-2667(18)30183-X.

Hodgson A and Park KJ (2019) Cervical adenocarcinomas: a heterogeneous group of tumors with variable etiologies and clinical outcomes, *Archives of Pathology and Laboratory Medicine,* 143: 34–46.

Jensen OM, Parkin DM, MacLennan R, Muir CS, Skeet RG (eds) (1991) *Cancer registration: principles and methods*, IARC Scientific Publication number 95, IARC, Lyon, France.

NACCHO (National Aboriginal Community Controlled Health Organisation) (2020) *The Australian Government's response to the COVID-19 pandemic*, COVID-19 Submission 64, NACCHO, Canberra.

National Centre for Immunisation Research and Surveillance (2021) *Impact evaluation of Australian national human papillomavirus vaccination program*, accessed16 November 2021. https://www.ncirs.org.au/reports

Department of Health and Aged Care (2020) *Historical data from the National HPV Vaccination Program Register*, accessed 14 September 2022. https://www.health.gov.au/resources/publications/historical-human-papillomavirus-hpv-immunisation-coverage-rates

NHMRC (National Health and Medical Research Council) (2005) *Screening to prevent cervical cancer: guidelines for the management of asymptomatic women with screen-detected abnormalities*, NHMRC, Canberra.

NHMRC Centre of Research Excellence in Cervical Cancer Control (2021) *Cervical Cancer Elimination Progress Report: Australia's progress towards the elimination of cervical cancer as a public health problem*, Melbourne, Australia, accessed 16 November 2021. https://www.cervicalcancercontrol.org.au

Raffle AE, Alden B, Quinn M, Babb PJ, Brett MT (2003) Outcomes of screening to prevent cancer: analysis of cumulative incidence of cervical abnormality and modelling of cases and deaths prevented, *British Medical Journal* 326(7395): 901.

Schiffman M, Castle PE, Jeronimo J, Rodriguez AC, Wacholder S (2007) Human papillomavirus and cervical cancer, *Lancet* 370(9590): 890–907.

Schiffman M and Kjaer SK (2003) Natural history of anogenital human papillomavirus infection and neoplasia, Chapter 2, *Journal of the National Cancer Institute Monographs* (31): 14–19.

Smith MA, Sherrah M, Sultana F, Castle PE, Arbyn M, Gertig D, Caruana M, Wrede CD, Saville M, and Canfell K (2022) National experience in the first two years of primary human papillomavirus (HPV) cervical screening in an HPV vaccinated population in Australia: observational study, *British Medical Journal* 376 :e068582 doi:10.1136/bmj-2021-068582.

Standing Committee on Screening (2016) *Population Based Screening Framework*, Report prepared for the Community Care and Population Health Principal Committee of the Australian Health Ministers' Advisory Council, Department of Health, Australian Government, accessed 17 November 2020. https://www.health.gov.au/resources/publications/population-based-screening-framework

Stolnicu S, Barsan I, Hoang L, Patel P, Terinte C, Pesci A, Aviel-Ronen S, Kiyokawa T, Alvarado-Cabrero I, Pike MC, Oliva E, Park KJ, Soslow RA (2018) International Endocervical Adenocarcinoma Criteria and Classification (IECC): a new pathogenetic classification for invasive adenocarcinomas of the endocervix, *American Journal of Surgical Pathology* 42: 214–226.

WHO (World Health Organization) (2020) *Coronavirus disease (COVID-19) pandemic*, accessed 22 January 2021. https://www.who.int/emergencies/diseases/novel-coronavirus-2019.

Whop LJ, Garvey G, Baade P, Cunningham J, Lokuge K, Brotherton JM, Valery PC, O'Connell DL, Canfell K, Diaz A, Roder D, Gertig D, Moore SP, Condon JR (2016) The first comprehensive report on Indigenous Australian women's inequalities in cervical screening: a retrospective registry cohort study in Queensland, Australia (2000–2011), *Cancer* 122(10): 1560–1569.

List of tables

List of figures

List of boxes

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 (2022) *National Bowel Cancer Screening Program monitoring report 2022*, catalogue number CAN 148, AIHW, Australian Government.

AIHW (2022) *BreastScreen Australia monitoring report 2022*, catalogue number CAN 150, 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 fourth report to monitor the National Cervical Screening Program since it introduced 5-yearly HPV tests in December 2017. In 2018–2021, more than 4.2 million people aged 25–74 participated, and in 2021, 11% 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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