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National Bowel Cancer Screening Program

Monitoring report 2023

AIHW

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Any enquiries about or comments on this publication should be directed to:
Australian Institute of Health and Welfare
GPO Box 570
Canberra ACT 2601
Tel: (02) 6244 1000
Email: info@aihw.gov.au

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Summary

The National Bowel Cancer Screening Program (NBCSP) began in 2006. It aims to reduce the morbidity and mortality from bowel cancer by actively recruiting and screening the eligible target population, aged 50–74, for early detection or prevention of the disease. This monitoring report is the eighth to examine the NBCSP using the current key performance indicators.

It is estimated that in 2023 about 7,356 people aged 50–74 will be diagnosed with bowel cancer (around 48% of all bowel cancers diagnosed) and 1,864 people in this age group will die from the disease (around 35% of all bowel cancer deaths).

Participation

Of the 6.1 million people invited between January 2020 and December 2021, 40.9% participated in the program. The national participation rate was lower than the previous rolling 2-year period (2019–2020) of 43.8%. The re-participation rate for those who took part in their previous invitation round and received a subsequent screening invitation was 81.3%. For those who had ever previously participated, the re-participation rate was 73.8%.

Screening results

In 2021, 76,880 Australians returned a positive screening test, giving a 6% screening positivity rate. Of those who received a positive screening test, 86% reported a follow-up diagnostic assessment. The median time from positive screening test result to diagnostic assessment was 58 days.

Cancers and adenomas detected

As form return is not mandatory, diagnostic assessment data were not considered complete enough to allow formal performance indicator reporting. However, of the outcome data available for participants who had a diagnostic assessment in 2021, 1 in 27 were diagnosed with a confirmed or suspected cancer (83 and 521, respectively) and adenomas were diagnosed in a further 2,332 (1 in 7 participants assessed). Adenomas are benign growths with potential to become cancerous; their removal lowers the risk of future bowel cancers developing.

Population groups

Participants who identified as being of Aboriginal or Torres Strait Islander origin, those who lived in *Very remote* areas and those who lived in low socioeconomic areas all had higher rates of positive screens (warranting further assessment), but lower rates of follow-up diagnostic assessment, and a longer median time between a positive screen and assessment.

Since the NBCSP began

Since the program began in August 2006, about 10.1 million NBCSP screening tests have been completed, with about 4.5 million people participating at least once. Previous data linkage studies by the Australian Institute of Health and Welfare found that the NBCSP is contributing to reducing morbidity and mortality from bowel cancer in Australia (AIHW 2014a, 2018a, 2018b).

Data at a glance

Table 1: Summary of NBCSP performance indicators[(a)], Australia

Performance indicator (PI)[(b)]		Definition	Value
PI 1	Participation rate	The percentage of people invited to screen through the NBCSP between **1 January 2020 and 31 December 2021** who returned a completed screening test within that period or by **30 June 2022**.	40.9%
PI 2	Screening positivity rate	The percentage of people who returned a valid NBCSP screening test and received a positive screening result (warranting further assessment) between **1 January 2021 and 31 December 2021**.	6%
PI 3	Diagnostic assessment rate	The percentage of people who returned a positive NBCSP screening test (warranting further assessment) between **1 January 2021 and 31 December 2021** and had follow-up diagnostic assessment within that period or by **31 December 2022**.	86%
PI 4	Time between positive screen and diagnostic assessment	For those who received a positive NBCSP screening test (warranting further assessment) between **1 January 2021 and 31 December 2021**, the median time between the positive screen and a follow-up diagnostic assessment within that period or by **31 December 2022**.	58 days
PI 5a	Adenoma detection rate	The proportion of people who returned a valid NBCSP screening test between **1 January 2021 and 31 December 2021** who were diagnosed with an adenoma within that period or by **31 December 2022**.	n.a.
PI 5b	Positive predictive value of diagnostic assessment for detecting adenoma	The percentage of people who returned a positive NBCSP screening test (warranting further assessment) between **1 January 2021 and 31 December 2021** that underwent a diagnostic assessment and were diagnosed with an adenoma by **31 December 2022**.	n.a.
PI 6a	Colorectal cancer detection rate	The proportion of people who returned a valid NBCSP screening test between **1 January 2021 and 31 December 2021** and were diagnosed with a screen-detected colorectal cancer by **31 December 2022**.	n.a.
PI 6b	Positive predictive value of diagnostic assessment for detecting colorectal cancer	The percentage of people who returned a positive NBCSP screening test (warranting further assessment) between **1 January 2021 and 31 December 2021** that underwent a diagnostic assessment and were diagnosed with cancer by **31 December 2022**.	n.a.
PI 7	Interval cancer rate	The proportion of people who returned a NBCSP screening test between **1 January 2021 and 31 December 2021** who were diagnosed with colorectal cancer (not involving a positive NBCSP screen and positive assessment) in the following 24-month period, or before their next screen, whichever comes first.	n.a.
PI 8	Cancer clinico-pathological stage distribution	The percentage of people who had received a NBCSP invite and were later diagnosed with colorectal cancer between **1 January 2021 and 31 December 2021**, by clinico-pathological stage (either Stage I, Stage II, Stage III, Stage IV, Stage unknown or inadequately staged).	n.a.
PI 9	Adverse events – hospital admission	The rate at which people who had a diagnostic assessment between **1 January 2021 and 31 December 2021** were admitted to hospital within 30 days of their assessment.	0.3 per 10,000 assessments

(continued)

Table 1 (continued): Summary of NBCSP performance indicators[(a)], Australia

Performance indicator (PI)		Definition	Value
PI 10	Incidence of bowel cancer	The (estimated) incidence rate of bowel cancer per 100,000 estimated resident population aged 50–74 in **2023**[(c)].	103 cases per 100,000 people
PI 11	Mortality from bowel cancer	The (estimated) mortality rate of bowel cancer per 100,000 estimated resident population aged 50–74 in **2023**[(c)].	26 deaths per 100,000 people

(a) NBCSP performance indicators presented here differ from the performance measures reported in monitoring reports before 2016. See 'Changes in monitoring the NBCSP' in Appendix C for further details.

(b) PI – performance indicator. Hereafter in this report, the abbreviation is used when referring to a specific indicator (for example, PI 3 Diagnostic assessment rate); otherwise, the full expression is used.

(c) Rates for 2023 are estimated based on 2010–2019 data for incidence and 2012–2021 data for mortality. See Appendix D for further details.

Notes

1. PIs 3–9 rely on information being reported to the National Cancer Screening Register (NCSR). As the return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function (PFUF) data are now used to supplement missing colonoscopy form data. See 'Current reporting limitations' on page 4 for more details.
2. PI 5a (adenoma detection rate), PI 5b (positive predictive value, or PPV, of diagnostic assessment for detecting adenoma), PI 6a (colorectal cancer detection rate), PI 6b (PPV of diagnostic assessment for detecting colorectal cancer), PI 7 (interval cancer rate) and PI 8 (cancer clinico-pathological stage distribution) are not reported due to data incompleteness or unavailability. See 'Current reporting limitations' on page 4 for more details.

Box 1: Data source transition

In November 2019, the NBCSP Register data were transitioned from the NBCSP Register, maintained by Services Australia (formerly the Department of Human Services), to the National Cancer Screening Register (NCSR), maintained by Telstra Health. This is the third NBCSP monitoring report to use data extracted from the NCSR. The NCSR is a live database which is updated over time and later reports using these data may have a greater level of completeness. This report uses NCSR data to 31 December 2022 (NCSR raw data extract (RDE) as at 14 January 2023).

Preliminary NBCSP participation data for 2020–2021 were available in January 2023 (AIHW 2023). These preliminary data have been updated in this release. This has resulted in changes to some results. For improved accuracy, we have reported participation rates to one decimal place in this release.

This report summarises trends from 2007 to 2021 in program participation rate (PI 1), diagnostic assessment rate (PI 3), and time between positive screen and diagnostic assessment (PI 4). Data for these trends use data collected for the NBCSP Register as well as data collected for the NCSR.

1 Introduction

1.1 Purpose of this report

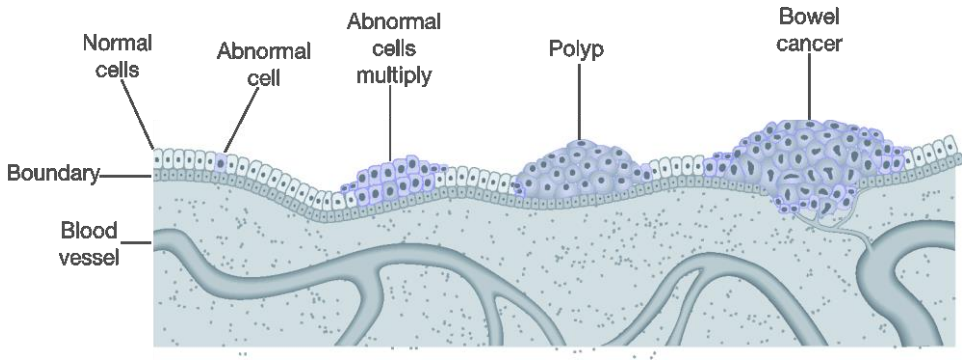
This report is the eighth to monitor data for the National Bowel Cancer Screening Program (NBCSP), based on the current NBCSP key performance indicators (AIHW 2014b). To ensure that the most recent data are used for each indicator, the time frame in which each is analysed can vary. However, where possible, analysis for indicators includes the period from 1 January 2021 to 31 December 2022.

1.2 Bowel cancer facts

Defining bowel cancer

Bowel cancer (or colorectal cancer) generally develops through a multistage process in which a series of cellular mutations occurs over time. Most bowel cancers start in the epithelial cells, which form part of the inner lining of the large bowel (intestinal mucosa layer). Early stages of these mutations result in benign polyps. However, a polyp may mutate further and become a benign adenoma and, ultimately, a malignant bowel cancer (Figure 1.1). Later stages of bowel cancer can spread to other sites in the body through the lymphatic or vascular system.

Figure 1.1: Beginnings of bowel cancer



Cancer stage

Bowel cancer stage describes the extent or spread of cancer in the body at diagnosis. Staging is usually based on the size of the tumour, whether lymph nodes contain cancer, and whether the cancer has spread from the original site to other parts of the body (Brierley et al. 2016). Cancer Australia, in consultation with state and territory cancer registries and the Australian Institute of Health and Welfare (AIHW), developed cancer staging rules for high-incidence cancers (including bowel cancer). These registry-defined cancer stages are closely related to the Tumour, Nodes and Metastasis (TNM) Classification of Malignant Tumours. Prognosis is often related to what stage of development the cancer has reached when first diagnosed, with smaller, less developed cancers having better prognoses than advanced cancers (Table 1.1).

Table 1.1: Registry-defined Australian stages of bowel cancer, 2011

Registry-defined Australian stage	Description	5-year relative survival estimates
I	Stage I – equivalent to TNM stage I: early stage Cancer has invaded several layers of the bowel, but has not spread outside the bowel wall	99%
II	Stage II – equivalent to TNM stage II: early stage Cancer has grown through the muscle layer of the bowel or rectum and invaded nearby tissues, but has not spread to the lymph nodes	89%
III	Stage III – equivalent to TNM stage III: locally advanced Cancer has spread to nearby lymph nodes, but not to other parts of the body	71%
IV	Stage IV – equivalent to TNM stage IV: metastatic The cancer has spread from where it started in the colon or rectum to other organs, often the liver and lungs, and/or non-regional lymph nodes	13%

Note: Descriptions and 5-year relative survival estimates were sourced from 2011 Australian stage data (AIHW 2019a).

Risk factors for bowel cancer

A risk factor is any factor associated with an increased likelihood of a person developing a health disorder or health condition. It is not known what causes bowel cancer; however, as at December 2016, several risk factors have been identified that may increase the chance of developing it – see Box 1.1 (AIHW 2021a; Bouvard et al. 2015; Dekker et al. 2019; IARC 2014; Song et al. 2015; WCRF and AICR 2007).

Box 1.1: Risk factors for bowel cancer

Behavioural and biomedical factors

Personal and lifestyle factors associated with an increased risk of bowel cancer include:

- overweight or obesity
- high blood plasma glucose
- physical inactivity
- high intake of red meat, processed meat and sugar-sweetened beverages
- low intake of fibre-rich foods (such as wholegrains, vegetables and fruits) and milk
- alcohol consumption
- tobacco smoking
- occupational hazards and exposures.

Family history and genetic susceptibility

Some genetic mutations increase the risk of bowel cancers, and these can also be passed from parent to child. Between 12% and 35% of bowel cancers can be attributed to a hereditary component (Dekker et al. 2019).

Ionising radiation

Ionising radiation from radiology (diagnostic X-rays), working in the nuclear industry, and natural sources can be a risk factor for bowel cancer.

Bowel cancer treatment

The aim of bowel cancer treatment is generally to remove the cancer and any cancer cells that may be left in the bowel or other parts of the body. However, treatment can vary based on individual factors, such as the type of cells involved, the size of the tumour, and the bowel cancer stage – some patients may receive palliative care. Treatment of bowel cancer commonly involves surgery to remove the cancer, with or without chemotherapy or radiation therapy.

Early diagnosis of bowel cancer can improve treatment outcomes and survival. Further, removal of polyps and adenomas (polypectomy) during a colonoscopy reduces the risk of their developing into bowel cancer. The excision of adenomatous polyps, together with regular surveillance, has been found to reduce bowel cancer incidence and mortality (Dekker et al. 2019).

1.3 Bowel cancer screening

Bowel cancer may be present for many years before a person shows symptoms, such as visible rectal bleeding, change in bowel habit, bowel obstruction or anaemia. Often, symptoms such as these are not exhibited until the cancer has reached a relatively advanced stage. However, non-visible bleeding of the bowel may occur in the precancerous stages (Figure 1.1) for some time. The relatively slow development of bowel cancer means that precancerous polyps and adenomas, and early-stage cancers, can potentially be screened for and treated. This makes bowel cancer a valid candidate for population screening (Standing Committee on Screening 2018).

An immunochemical faecal occult blood test (iFOBT) is a common method of bowel cancer screening (Schreuders et al. 2015). An iFOBT is a non-invasive test that can detect microscopic amounts of blood in a sample from a bowel motion, which may indicate a bowel abnormality, such as an adenoma or cancer.

National Bowel Cancer Screening Program

In Australia, government-funded, population-based bowel cancer screening has been available through the NBCSP since its inception in 2006. The NBCSP is managed by the Department of Health and Aged Care in partnership with state and territory governments, Services Australia (formerly the Department of Human Services) (2006 to November 2019) and the National Cancer Screening Register (NCSR, November 2019 to present). The NBCSP aims to reduce the incidence of, and illness and mortality related to, bowel cancer in Australia through screening to detect cancers and pre-cancerous lesions in their early stages, when treatment will be most successful.

The latest *Clinical practice guidelines for the prevention, early detection and management of colorectal cancer* were endorsed by the National Health and Medical Research Council in 2017 (CCACCGWP 2017). These guidelines continue to recommend that biennial iFOBT bowel cancer screening for the asymptomatic Australian population begins at age 50 and continues to age 74. A staged rollout of the NBCSP was used to help ensure that health services, such as diagnostic assessment and treatment options, were able to meet an increased demand as more people were invited to screen.

The rollout of biennial screening for all eligible Australians in the target age group (50–74) was completed in 2020. Eligible Australians are now sent an iFOBT screening kit and invited to screen every 2 years between the ages of 50 and 74. This excludes those in the target age group who do not have a valid mailing address in the NCSR. These individuals cannot be mailed, or may not receive, their NBCSP invitation until their Medicare address is updated. All users of Medicare are encouraged to update their address details when they move residence.

To participate, invitees complete the screening test and post it to the NBCSP pathology laboratory for analysis. Results are sent to the participant, to the participant's nominated primary health-care practitioner (PHCP), and to the NCSR. Participants with a positive screening result, indicated by blood in the stool sample, are advised to consult their PHCP to discuss further diagnostic assessment – in most cases, a colonoscopy.

The AIHW conducted a study of people diagnosed with bowel cancer between 2006 and 2008. This study showed that NBCSP invitees (particularly those participating) who had been diagnosed with bowel cancer had a lower risk of dying from the disease and were more likely to have less advanced bowel cancers when diagnosed than non-invitees. These findings show that the NBCSP is contributing to reducing morbidity and mortality from bowel cancer in Australia (AIHW 2014a). More recent AIHW data linkage projects have further supported these findings (AIHW 2018a, 2018b).

For more information on the NBCSP, see Appendix C and http://www.health.gov.au/nbcsp.

Monitoring the NBCSP

NBCSP participant data come from a variety of sources along the screening pathway. Data are collected electronically, as well as from forms that participants, PHCPs, colonoscopists, pathologists, and other medical staff complete and return to the NCSR. However, as form return from health practitioners is not mandatory, these data may be incomplete.

This report is the eighth to present national data for the NBCSP, using the current key performance indicators (PIs) developed by the National Bowel Cancer Screening Program Report and Indicator Working Group (Table 1). These indicators were endorsed by the Standing Committee on Screening, the Community Care and Population Health Principal Committee, the National Health Information Standards and Statistics Committee, and the National Health Information and Performance Principal Committee. They are consistent with the 5 Australian Population Based Screening Framework steps: recruitment, screening, assessment, diagnosis, and outcomes (AIHW 2014b). See Appendix C for a summary of changes in monitoring the NBCSP that affect this report.

Current reporting limitations

Except for participation and iFOBT results, the completion and sending of other NBCSP forms or data by health practitioners is not mandatory and therefore data – and results – for PIs 3 to 9 are not complete. In this report, for the first time, colonoscopy form and MBS claim data have been supplemented with Participant follow-up function (PFUF) data for those who had a positive screening test. See 'Changes in monitoring the NBCSP' in Appendix C for further details.

Other limitations of NBCSP data include the lack of reliable population subgroup identification at the time of invitation. NBCSP participants can self-identify as being an Aboriginal and/or Torres Strait Islander person, having disability, or speaking a language other than English at home by completing and returning the participant details form along with their iFOBT for analysis. The NCSR uses self-reporting from the NBCSP participant details form and the Medicare Voluntary Indigenous Identifier, along with other sources such as the National Cervical Screening Program (for invitees who participate in cervical screening) to assign Indigenous status. These sources are still not currently sufficient to reliably identify membership of these subgroups for all invitees. Hence, it is not possible to accurately determine NBCSP participation rates for these subgroups due to the lack of denominators (invitations issued) for them. Ways to reduce these limitations are constantly being investigated; Chapter 5 in this report gives estimates of participation for these subgroups using proportions from the 2021 Census.

Seven performance indicators are aspirational, in that there is either a lack of national data or incomplete data. In this report, PI 5a (adenoma detection rate), PI 5b (positive predictive value, or PPV, of diagnostic assessment for detecting adenoma), PI 6a (colorectal cancer detection rate) and PI 6b (PPV of diagnostic assessment for detecting colorectal cancer) are not formally reported due to incomplete data. These indicators require complete data return from histopathology. As well, PI 7 (interval cancer rate) and PI 8 (cancer clinico-pathological stage distribution) require linkage with complete national cancer incidence data, which is planned but not currently available. Lastly, PI 9 (adverse events – hospital admission) requires linkage with complete national hospital admissions data, which is not currently possible. However, the NCSR currently has (incomplete) information on adverse events, and this will be used until a more complete adverse event data source becomes available. This is the second NBCSP monitoring report to use data extracted from the NCSR. The NCSR is a live database which is updated over time and later reports using data for the same time period may have a greater level of completeness.

2 Picture of bowel cancer in Australia

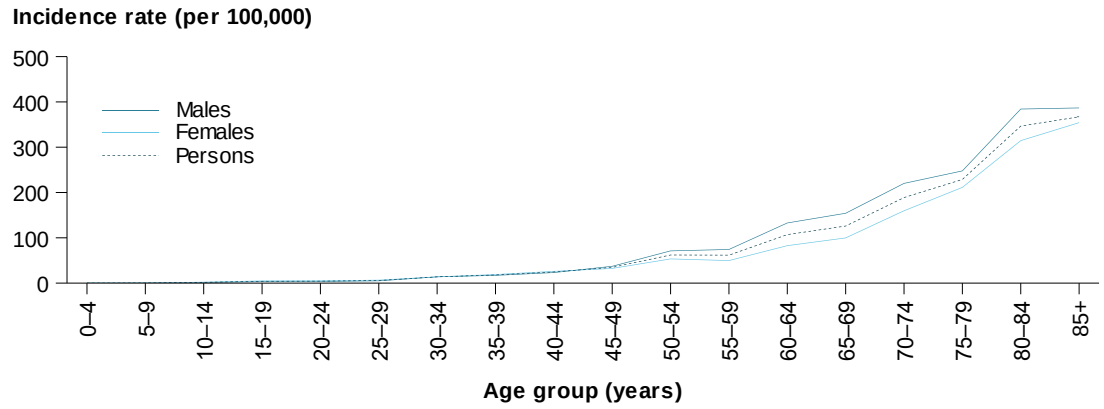
2.1 Number of new cases

In 2023, it is estimated that there will be 7,356 new cases of bowel cancer diagnosed in people aged 50–74 (around 48% of all bowel cancer diagnoses), which is equivalent to 103 new cases for every 100,000 people aged 50–74. It is estimated that bowel cancer will be the fourth most commonly diagnosed cancer in Australians of all ages (after prostate cancer, breast cancer, and melanoma) in 2023 (AIHW 2022a).

Target age group (50–74 years)	All ages
7,356 new cases estimated for 2023 103 new cases per 100,000 target-age people	15,367 new cases estimated for 2023 57 new cases per 100,000 people

Bowel cancer risk increases with age. In 2023, the incidence rate is expected to remain higher for people aged 45 and over than for younger people (Figure 2.1).

Figure 2.1: Age-specific incidence rates of bowel cancer, by sex, Australia, 2023



Notes

1. The 2023 estimates are based on 2010–2019 incidence data. See Appendix D for further information.
2. Age-specific rates are expressed per 100,000 people.

Source: Table A3.24.

It is estimated that a person's risk of being diagnosed with bowel cancer (unadjusted for competing mortality) is:

- 5 in 1,000 before age 50
- 27 in 1,000 (1 in 37) for those aged 50–74
- 45 in 1,000 for those aged 75 and over.

This increase in absolute risk from age 50 is part of the evidence base behind the guideline that bowel screening programs begin at age 50 (CCACCGWP 2017). Biennial screening for those aged 50–74 was fully rolled out from 2020. It is expected that, once biennial screening has been in place for a number of years, the risk of diagnosis and death for those aged 50 and over (including those older than the target age group) will be reduced, as those people will have been consistently invited to screen for abnormalities since they turned 50.

2.2 Number of deaths

Box 2.1: Changes to bowel cancer mortality coding

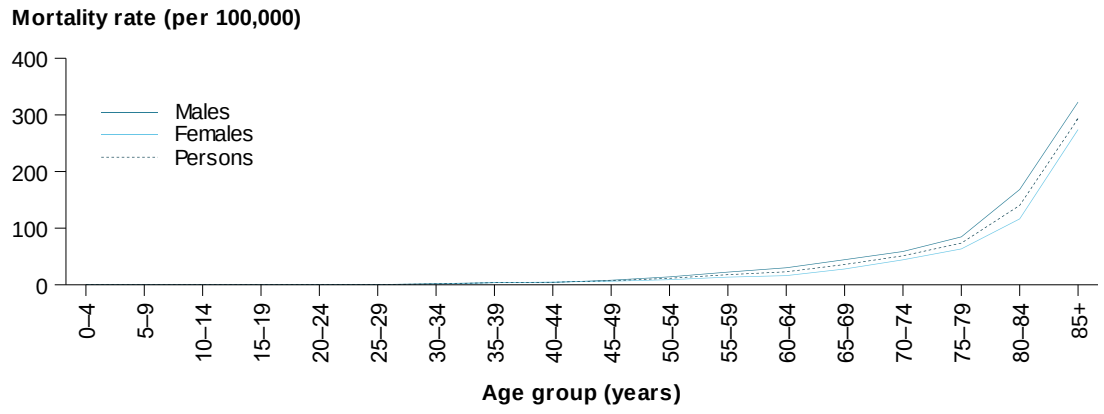
The AIHW uses the National Mortality Database (NMD) to report cancer mortality, a database coded and compiled by the Australian Bureau of Statistics (ABS). ABS advice notes that where the term 'bowel cancer' is recorded on the death certificate, internationally agreed rules state that the cancer should be coded to a less specific International Classification of Diseases and Related Health Problems, 10th Revision (ICD-10) code (C26.0) as the specific site of the cancer is not known (ABS 2016). The ABS advises further that the code C26.0 should be included alongside deaths due to cancers of the colon and rectum (C18–C20) when assessing 'bowel cancer' deaths. For this reason, monitoring reports for the NBCSP from 2019 onwards use C18–C20, and also include C26.0 when reporting deaths from bowel cancer using the NMD. This approach differs from that used in previous versions of this report and will result in a greater number of deaths being attributed to bowel cancer. Hence, caution should be considered when comparing trends in bowel cancer mortality here with those in NBCSP monitoring reports published before 2019.

In 2023, it is estimated that there will be 1,864 bowel cancer deaths in people aged 50–74 (around 35% of all bowel cancer deaths), which is equivalent to 26 deaths for every 100,000 people aged 50–74. It is estimated that bowel cancer will remain the second leading cause of cancer death in Australians of all ages (after lung cancer) in 2023 (AIHW 2022a).

Target age group (50–74 years)	All ages
1,864 deaths estimated in 2023 26 deaths per 100,000 target-age people	5,307 deaths estimated in 2023 20 deaths per 100,000 people

It is estimated that, in 2023, the mortality rate will be higher for people aged 50 and over than for younger people. The rate will increase with age for both men and women (Figure 2.2).

Figure 2.2: Age-specific mortality rates of bowel cancer, by sex, Australia, 2023



Notes

1. The 2023 estimates are based on 2012–2021 mortality data. See Appendix D for further information.
2. Age-specific rates are expressed per 100,000 people.

Source: Table A3.28.

The risk of dying from bowel cancer increases with age. The risk (unadjusted for competing mortality) is estimated as being:

- 1 in 1,000 before age 50
- 7 in 1,000 for those aged 50–74
- 25 in 1,000 for those aged 75 and over.

As mentioned earlier, once biennial screening has been in place for a number of years, it is expected that the risk of diagnosis and death for those aged 50 and over (including those older than the target age group) will be reduced, as those people will have been consistently invited to screen for abnormalities since they turned 50.

2.3 Survival

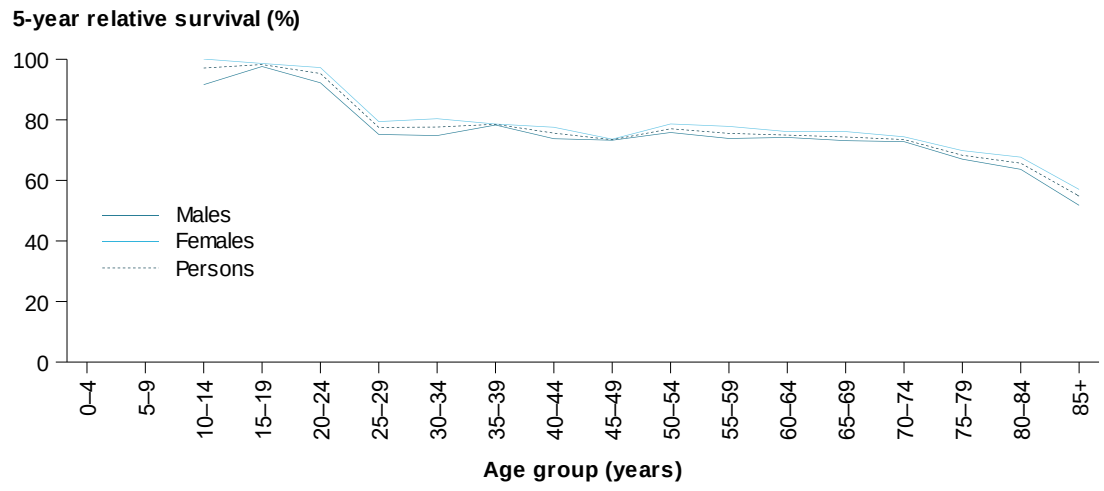
Information on survival indicates cancer prognosis and the effectiveness of treatment available. Survival in this report refers to 'relative survival' which is the probability of being alive for a given amount of time after diagnosis compared with the general population, and reflects the impact of a cancer diagnosis. Survival of less than 100% suggests that those with bowel cancer have a lower chance of surviving for at least 5 years after diagnosis than the general population.

In the period 2015–2019, Australians aged 50–74 who were diagnosed with bowel cancer had a 75% chance of surviving for 5 years compared with their counterparts in the general population.

Target age group (50–74 years)	All ages
75% 5-year relative survival (2015–2019)	71% 5-year relative survival (2015–2019)

In the period 2015–2019, 5-year relative survival was lower for people aged 70 and over than for younger people (Figure 2.3).

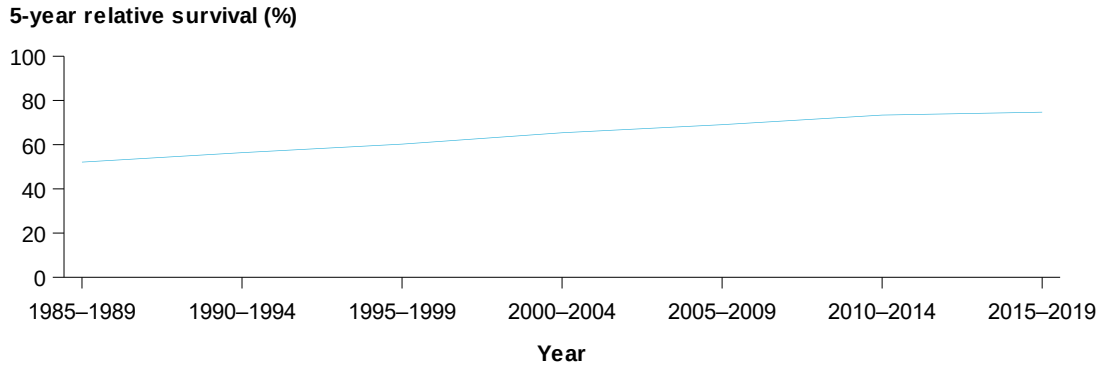
Figure 2.3: Five-year relative survival from bowel cancer, by age group and sex, Australia, 2015–2019



Source: Table A2.1.

Between the periods 1985–1989 and 2015–2019, the 5-year relative survival rate from bowel cancer for people aged 50–74 at diagnosis rose from 52% to 75% (Figure 2.4).

Figure 2.4: Trend in 5-year relative survival from bowel cancer, people aged 50–74 at diagnosis, Australia, 1985–1989 to 2015–2019

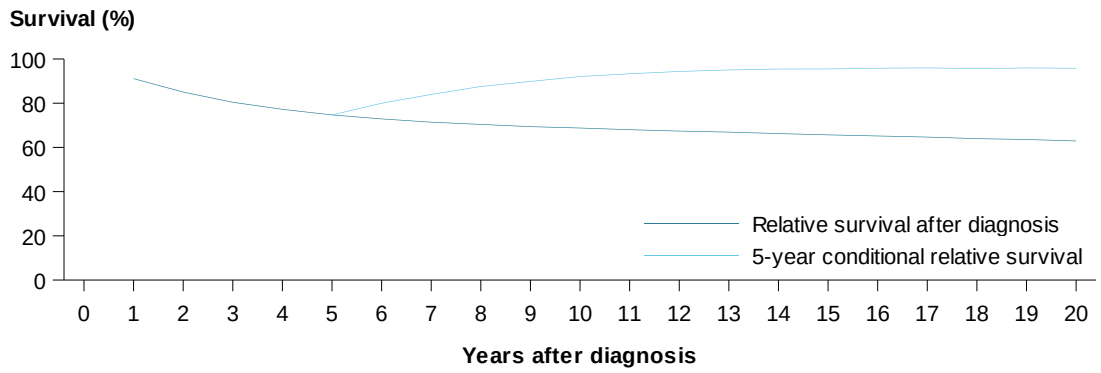


Source: Table A2.2.

Relative survival shows the probability of survival at diagnosis. Conditional relative survival estimates show the probability of surviving a given number of years, provided that an individual has already survived a specified amount of time after diagnosis.

While Australians aged 50–74 who were diagnosed with bowel cancer had a 75% chance of surviving for 5 years compared with their counterparts in the general population, among those who had already survived 5 years, the chance of surviving for at least another 5 years (5-year conditional relative survival) was 92% (Figure 2.5).

Figure 2.5: Relative survival at diagnosis and 5-year conditional relative survival from bowel cancer, people aged 50–74 at diagnosis, Australia, 2015–2019



Note: Conditional relative survival estimates show the probability of surviving bowel cancer for a given number of years provided an individual has already survived a specified amount of time after diagnosis.

Source: Table A2.3.

Prevalence of bowel cancer

Cancer survivorship focuses on the health and life of a person diagnosed with cancer after treatment until the end of life (NCI 2020). It is more than simply not dying from cancer; it

focuses on living with, and life after, a cancer diagnosis (Jackson et al. 2013). Survivorship covers the physical, psychosocial, and economic issues of cancer, including the later effects of treatment, secondary cancers, and quality of life (NCI 2020).

Prevalence is the number of people alive (surviving) after a diagnosis of cancer. At the end of 2019, there were 56,767 Australians alive who had been diagnosed with bowel cancer in the previous 5 years and 95,204 who had been diagnosed in the previous 10 years (Table 2.1). When limited to people aged 50–74 at the end of 2019, there were 29,437 alive after being diagnosed with bowel cancer in the previous 5 years and 47,895 after being diagnosed in the previous 10 years (Table 2.1).

Table 2.1: Prevalence of bowel cancer, by age group and sex, Australia, end of 2019

Age group (years)	Sex	5-year prevalence		10-year prevalence	
		Number	Rate per 100,000	Number	Rate per 100,000
50–74	Males	17,009	507.0	27,546	821.0
	Females	12,428	353.0	20,349	578.0
	Persons	**29,437**	**428.2**	**47,895**	**696.6**
All ages	Males	30,702	242.4	51,296	404.9
	Females	26,065	202.7	43,908	341.5
	Persons	**56,767**	**222.4**	**95,204**	**373.0**

Source: AIHW Australian Cancer Database (ACD) 2019.

2.4 Burden of bowel cancer

Burden of disease analysis is used to assess and compare the impact of different diseases and injuries on a population. It involves determining their impact in terms of the following:

- the number of years of healthy life lost through living with an illness or injury (the non-fatal burden, years lived with disability, or YLD)
- the number of years of life lost through dying prematurely from an illness or injury (the fatal burden, years of life lost, or YLL)
- the number of disability-adjusted life years (DALYs), which combines the non-fatal and fatal burden (or the combined impact of dying early and living with illness). One DALY is equivalent to one healthy year of life lost.

Burden of disease estimates capture both the quantity and quality of life, and reflect the magnitude, severity, and impact of disease and injury within a population. Burden of disease studies can also estimate the contribution of specific risk factors to disease burden (known as the attributable burden) (AIHW 2022b).

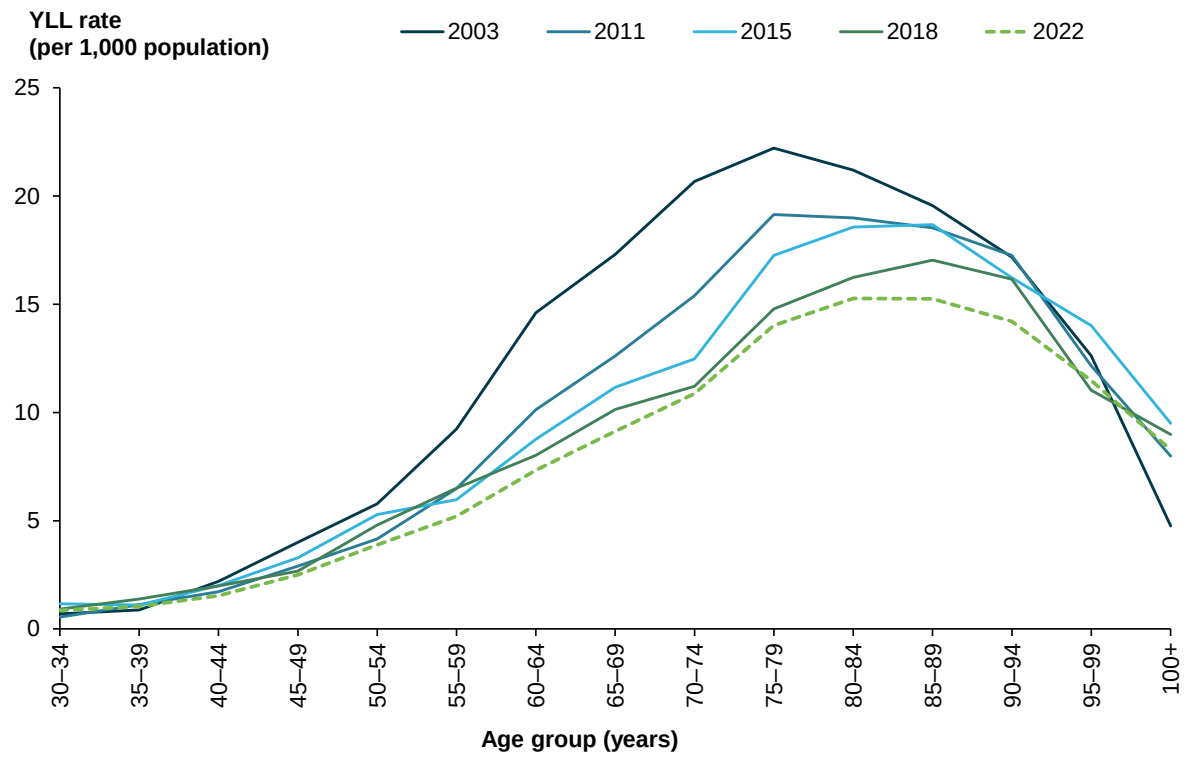
The AIHW report *Australian Burden of Disease Study 2022* (hereafter referred to as the ABDS 2022b) found that 97,754 years of healthy life were lost (from fatal and non-fatal outcomes) due to bowel cancer in 2022 (AIHW 2022b). This meant bowel cancer accounted for 1.8% of the total disease burden in Australia, making it the 17th most burdensome disease overall (16th in males and 17th in females). Bowel cancer (97,754 DALYs) was the second most burdensome cancer in 2022 behind lung cancer (159,281 DALYs); Australians lost many more years of life due to dying from bowel cancer (92.8% of total bowel cancer burden) than healthy years lost from living with the impacts of the disease (7.2% of total bowel cancer burden) (AIHW 2022b).

Changes in burden since 2003

The NBCSP was introduced in 2006; hence, comparisons of the health burden before and after this date, as well as during the full program rollout, are of interest. The ABDS 2022 provides burden of disease estimates best matched to the Australian public health context for the Australian population for 2022. Due to improvements in data sources and methodological changes, published estimates from previous Australian studies are not directly comparable with those for the ABDS 2022. However, estimates for 2018, 2015, 2011, and 2003, revised using the same methods as for 2022, were calculated to enable direct comparisons over time (Figure 2.6).

Between 2003 and 2022, the age-standardised rate (ASR) of total burden from bowel cancer fell 37%, from 4.8 to 3.0 DALYs per 1,000 people. This reduction was primarily due to a drop in fatal burden from 4.6 to 2.8 YLL per 1,000 people (AIHW 2022b). The change in YLL ASRs was driven by a shift towards people dying from bowel cancer at older ages, a drop to 10.9 YLL per 1,000 people aged 70–74 in 2022 compared to 20.7 YLL per 1,000 people aged 70–74 in 2003, and a lower peak of 15.3 YLL per 1,000 people aged 80–89 in 2022 compared with the peak in 2003 of 22.2 YLL per 1,000 people aged 75–79.

Figure 2.6: Change in fatal burden – years of life lost (YLL) from bowel cancer, age-specific rate (per 1,000 people), Australia, 2003, 2011, 2015, 2018 and 2022



Sources: AIHW Australian Burden of Disease Database; Table A2.4.

Contribution of risk factors to bowel cancer burden

The ABDS 2018 calculated the proportion of the bowel cancer burden attributable to a number of behavioural, environmental, and metabolic risk factors. For the majority of this analysis, the risk factors were analysed independently, meaning that the estimates cannot be added together without further analysis to take into account that many risk factors are interrelated (AIHW 2021a).

After analysis to adjust for interrelated risk factors, the study estimated that 54% of bowel cancer burden in 2018 was attributable to the combined impact of associated risk factors, referred to as the 'joint effect' (AIHW 2021a). All dietary risk factors combined were responsible for 26% of bowel cancer burden.

When looking at the individual contribution of each risk factor, a low consumption of wholegrains and high-fibre cereals and overweight and obesity contributed the most individually to bowel cancer burden in 2018 (16% and 14%, respectively). A greater proportion of bowel cancer burden in males was due to overweight and obesity than in females (19% compared with 7%) (Table 2.2). Physical inactivity was responsible for around 12% of bowel cancer burden in 2018.

See *Australian Burden of Disease Study: methods and supplementary material 2018* (AIHW 2021b) for more information on the methods used to quantify the impact of specific risk factors.

Table 2.2: Bowel cancer burden attributed to selected risk factors (DALY and %), Australia, 2018

	Males		Females		Persons	
Risk factor	**Attributable DALY**	**Proportion of bowel cancer burden (%)**	**Attributable DALY**	**Proportion of bowel cancer burden (%)**	**Attributable DALY**	**Proportion of bowel cancer burden (%)**
Alcohol use	2,797	5.1	2,900	6.8	5,697	5.8
All dietary risks	14,468	26.3	11,167	26.2	25,635	26.3
• Diet high in processed meat	1,222	2.2	954	2.2	2,176	2.2
• Diet high in red meat	3,224	5.9	2,477	5.8	5,701	5.8
• Diet low in milk	2,607	4.7	2,010	4.7	4,618	4.7
• Diet low in whole grains and high-fibre cereals	8,777	16.0	6,774	15.9	15,551	15.9
High blood plasma glucose	3,872	7.0	2,127	5.0	5,999	6.1
Overweight and obesity	10,406	18.9	2,764	6.5	13,169	13.5
Physical inactivity	6,048	11.0	5,448	12.8	11,497	11.8
Tobacco use	2,878	5.2	3,741	8.8	6,619	6.8
Joint effect	**30,527**	**55.5**	**21,850**	**51.3**	**52,377**	**53.7**

Note: Attributable burden was analysed independently for each risk factor and only the 'joint effect' estimates take into account the complex pathways and interactions between risk factors. Therefore, attributable DALY and percentages for individual risk factors will not sum to the joint effect.

Source: AIHW Australian Burden of Disease Database.

3 Performance indicators

3.1 Summary

The Population Based Screening Framework (Standing Committee on Screening 2018) uses 5 incremental stages to describe a population screening pathway. The performance indicator data in this monitoring report have been applied to these stages and Figure 3.1 shows how the indicators relate to the framework. For further information on these indicator outcomes over the life of the NBCSP (2006 to 2022), see Appendix B.

Note that data for diagnostic assessments, adenomas and cancers detected, and hospital admissions (PIs 3–9) rely on information being reported back to the NCSR; this reporting is not mandatory and is known to be incomplete.

Recruitment

Of people invited in the 2-year period 2020–2021, 40.9% participated in the NBCSP (Table A3.2). This is lower than the 43.8% participation rate in the previous rolling 2-year period (2019–2020) (Table A3.5).

The participation rate was higher for people receiving their second, third, or later screening invitation (42.5%) than for those receiving their initial invitation to screen (30.3%) (Table A3.3).

For those who had participated in their previous invitation round, the re-participation rate was 81.3%. For those who had ever previously participated, the re-participation rate was 73.8% (Table A3.3).

Screening and assessment

In 2021, 76,880 participants returned a positive screening test, giving a 6.2% screening positivity rate (Table A3.6). People who receive a positive screening result are encouraged to visit their PHCP for referral to diagnostic assessment.

In this report, for the first time, colonoscopy form data and MBS claims have been supplemented with Participant follow-up function (PFUF) data for those who had a positive screening test. Of the people who received a positive screening test, 85.5% had a diagnostic assessment recorded through one of these sources (Table A3.10). Of those who had a diagnostic assessment, the median time between a positive screening result and a diagnostic assessment was 58 days (Table A3.18).

Diagnosis

As return of the assessment form is not mandatory, diagnosis data were not considered to be complete enough to allow formal performance indicator reporting. However, using the available data for those assessed in 2021, 83 confirmed cancers, 521 suspected cancers, and 2,332 adenomas were reported (Table A4.1).

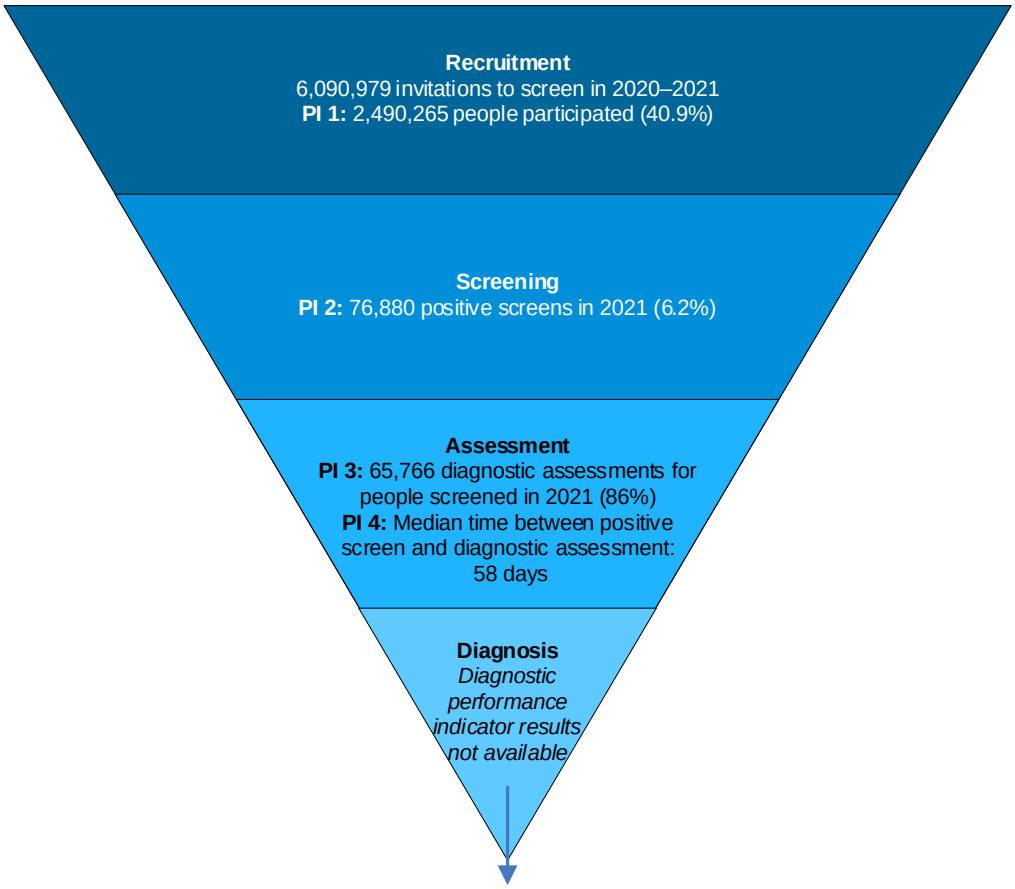
See Chapter 4 for a summary of bowel abnormality detection results, based on available assessment and diagnosis data. Also see *Analysis of bowel cancer outcomes for the National Bowel Cancer Screening Program 2018* (AIHW 2018a) for the most recent PPV of diagnostic assessment for detecting bowel (colorectal) cancer.

Outcomes

In 2021, two people who underwent a diagnostic assessment were recorded as being admitted to hospital within 30 days of this procedure, giving a hospital admission rate after assessment of 0.3 per 10,000 assessments (Table A3.23).

In 2023, it is estimated that 7,356 people aged 50–74 will be diagnosed with bowel cancer (Table A3.24) and that 1,864 people aged 50–74 will die from the disease (Table A3.28).

Figure 3.1: Summary of NBCSP performance indicators for this report, Australia



Assessment details

Those assessed in 2021[(a)]

No issue or other diagnosis	6,771	(43.0%)
Biopsy awaiting histopathology	6,020	(38.3%)
Non-advanced adenomas	1,151	(7.3%)
Advanced adenomas	1,181	(7.5%)
Suspected cancer	521	(3.3%)
Confirmed cancer	83	(0.5%)

Outcomes

For morbidity and mortality

PI 9:	Adverse events	0.3 per 10,000	(2021)
PI 10:	Incidence	103 per 100,000	(2023)
PI 11:	Mortality	26 per 100,000	(2023)

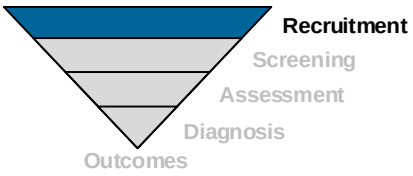
(a) Based on available outcome data. Percentages may not sum to 100% due to rounding. Excludes 59,899 assessments with no record of outcome.

Notes

1. The recruitment indicator PI 1 is reported against the 2-year calendar period 2020–2021, with follow-up to June 2022. The screening indicator PI 2 is reported against the year 2021. The assessment and adverse events indicators are reported against the year 2021, with follow-up to December 2022 for assessments and to June 2022 for adverse events. Incidence and mortality are estimated rates for those aged 50–74 in 2023.
2. Assessment, diagnosis and outcomes (PIs 3–9) rely on information being reported back to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function (PFUF) data are now used to supplement missing colonoscopy form data. See 'Current reporting limitations' on page 4 for more details.
3. PI 5a (adenoma detection rate), PI 5b (PPV of diagnostic assessment for detecting adenoma), PI 6a (colorectal cancer detection rate), PI 6b (PPV of diagnostic assessment for detecting colorectal cancer), PI 7 (interval cancer rate) and PI 8 (cancer clinico-pathological stage distribution) are not reported due to data incompleteness or unavailability. See 'Current reporting limitations' on page 4.

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR raw data extract (RDE)) 14/01/2023).

3.2 Recruitment



PI 1 – Participation rate

Definition: The percentage of people invited to screen through the NBCSP between **1 January 2020 and 31 December 2021** who returned a completed screening test within that period or by **30 June 2022** (AIHW 2014b).

Rationale: Participation should be monitored to ensure acceptability, equity and uptake, with the aim that reductions in incidence, morbidity and mortality can be achieved. Without participation, the NBCSP cannot achieve earlier detection.

Data quality: All invitations issued and iFOBT kits returned are recorded in the NCSR.

Guide to interpretation: The number of individuals sent a screening invitation excludes those who deferred or opted out without completing their screening test, and those who skipped an invitation round due to a recent colonoscopy. Invitees without a valid mailing address in the NCSR are also necessarily excluded from invitation. A non-valid address may be a result of the NCSR not recognising a current postal address, or a return to sender flag is currently recorded against the invitee and their given address. Appendix A (Table A3.1) contains details on the number of invitees in these categories.

Data on participation by Indigenous Australians, by preferred language spoken at home, and by disability status are not currently available due to the lack of complete denominators for these subgroups. See Chapter 5 for estimates of participation for these subgroups.

Participation is measured over 2 years to align with the 2-year recommended screening interval. A consequence of this is that there are 'rolling' participation rates, in which there is an overlap of one calendar year between any 2 consecutively reported participation rates.

National participation rate: 40.9%.

The following apply to the 6,090,979 eligible people invited from 1 January 2020 to 31 December 2021:

Australia-wide: A total of 2,490,265 people participated in the NBCSP, giving an overall Australia-wide participation rate of 41% (Table A3.2).

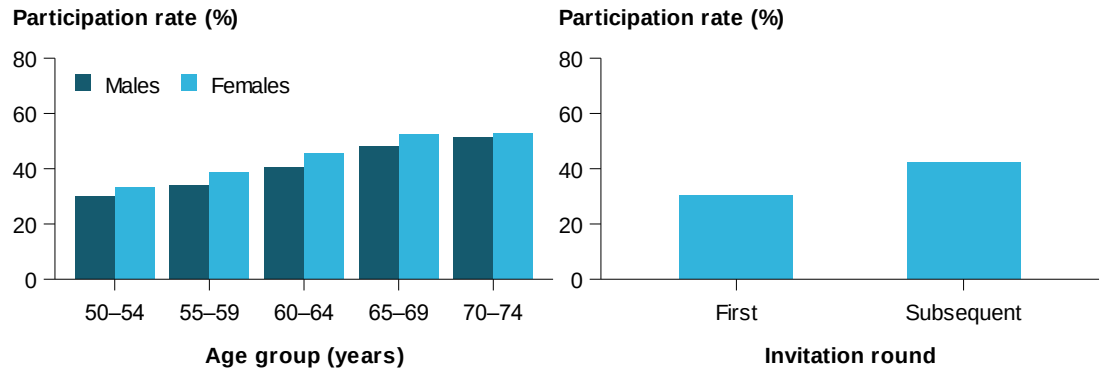
Sex: Female invitees had a higher participation rate (43%) than males (39%) (Table A3.2).

Age: The participation rate increased with each invitation age group, from 32% for people aged 50–54 to 52% for people aged 70–74 (Figure 3.2).

Invitation round: The participation rate was higher for people who had previously been invited to the program (receiving their second or later screening invitation, 43%) compared with people receiving their first invitation (30%) (Figure 3.2).

The re-participation rate was higher for those who had participated in their previous invitation round and were receiving a subsequent invitation (81%) compared with those who had ever previously participated (74%) (Table A3.3).

Figure 3.2: Participation of people aged 50–74, by sex and age and by invitation round, Australia, 2020–2021



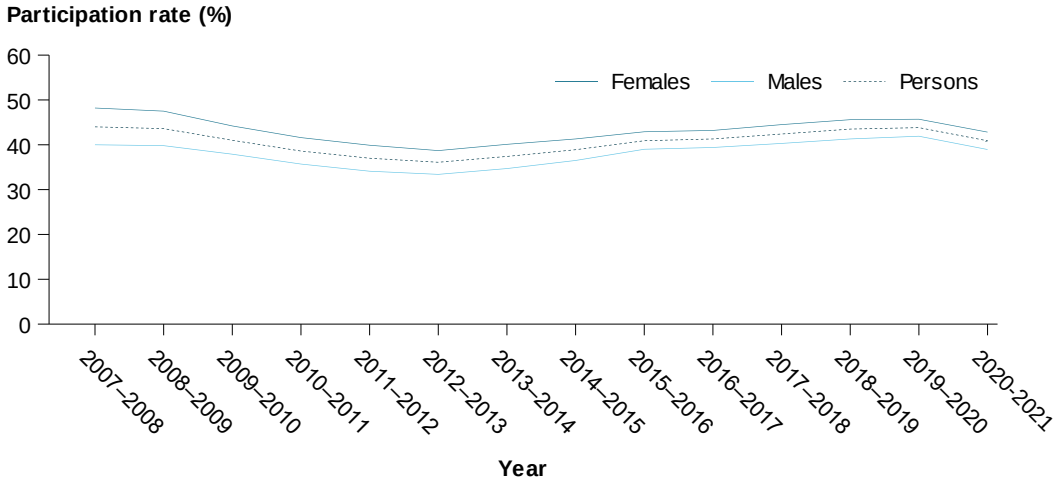
Note: Subsequent invitation round includes second, third and later invitation rounds.

Sources: Tables A3.2 and A3.3.

Trend: Monitoring reports before 2016 analysed participation differently from the indicator used in this report. This means that trend comparisons with rates published in those earlier reports cannot be made. To allow trends to be compared over time, the new participation indicator specifications have been applied retrospectively to earlier years of program data within this report (Figure 3.3).

Using this indicator across all program data to date, the participation rate fell from 44% in 2007–2008 to 36% in 2012–2013, then gradually rose to 44% in 2019–2020, before a drop to 41% in 2020–2021 (Figure 3.3).

Figure 3.3: Participation of people aged 50–74, by sex, Australia, 2007–2008 to 2020–2021



Notes

1. Data presented are for rolling 2-year participation periods.
2. Trend data used the performance indicator specifications retrospectively on previous years' data.

Source: Table A3.5.

State and territory: The participation rate was highest for people living in South Australia, Tasmania, the Australian Capital Territory and Victoria (44% respectively) and lowest for people living in the Northern Territory (26%) (Figure 3.4).

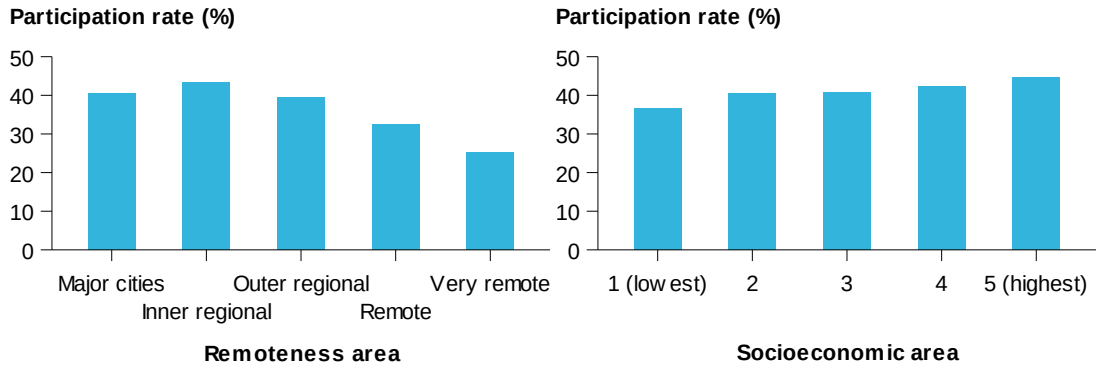
Figure 3.4: Participation of people aged 50–74, by state and territory, Australia, 2020–2021

Source: Table A3.4.

Remoteness area: The participation rate was highest for people living in *Inner regional* areas (43%) and lowest for people living in *Very remote* areas (25%) (Figure 3.5).

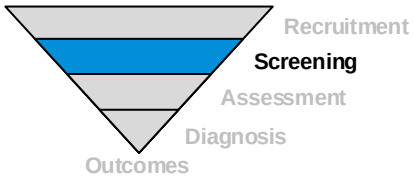
Socioeconomic area: The participation rate was highest for people living in the highest socioeconomic areas (45%) and lowest for those living in the lowest socioeconomic areas (37%) (Figure 3.5).

Figure 3.5: Participation of people aged 50–74, by remoteness area and socioeconomic area, Australia, 2020–2021



Source: Table A3.4.

3.3 Screening



PI 2 – Screening positivity rate

Definition: The percentage of people who returned a valid NBCSP screening test and received a positive screening result (warranting further assessment) between **1 January 2021 and 31 December 2021** (AIHW 2014b).

Rationale: The positive screening test rate determines the diagnostic assessment workload and lesion detection rate. It is important that the accepted positivity range is reviewed and revised (to improve lesion detection rates while limiting 'false' positive results) if necessary. Monitoring this is important for program planning and quality assurance. Further, monitoring the positivity rate by various stratifications may reveal emerging positive or negative trends that need to be investigated, and rectified.

Data quality: All iFOBT results are recorded in the NCSR.

Guide to interpretation: This indicator counts all tests analysed in the defined period, not tests analysed from those invited in the defined period; therefore, the cohort monitored is different from the cohort monitored in the participation indicator.

National screening positivity rate: 6.2%.

The following apply to the 1,236,513 invitees who had a screening test analysed in 2021:

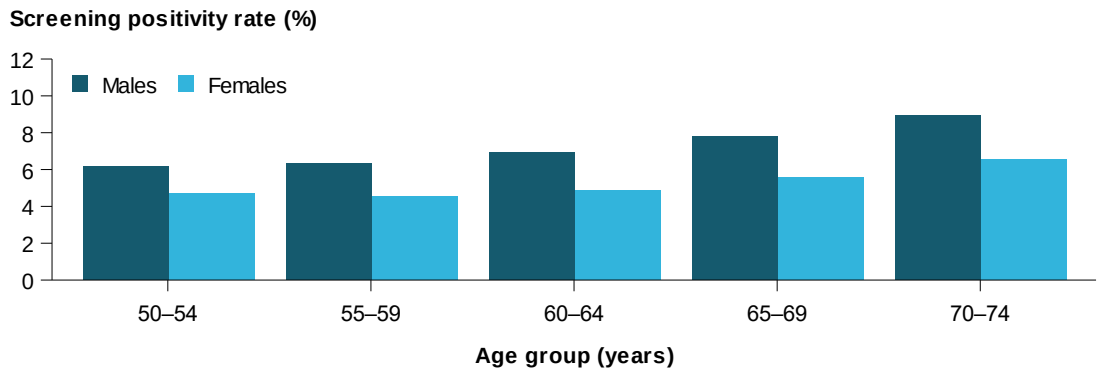
Australia-wide: A total of 76,880 people received a positive screening test result, giving an overall Australia-wide screening positivity rate of 6.2% (Table A3.6).

Sex: Male participants had a higher screening positivity rate than females (7% compared with 5%, respectively), across all age groups (Figure 3.6).

Age: The screening positivity rate increased with each age group, from 5% for people aged 50–59 to 8% for those aged 70–74 (Figure 3.6).

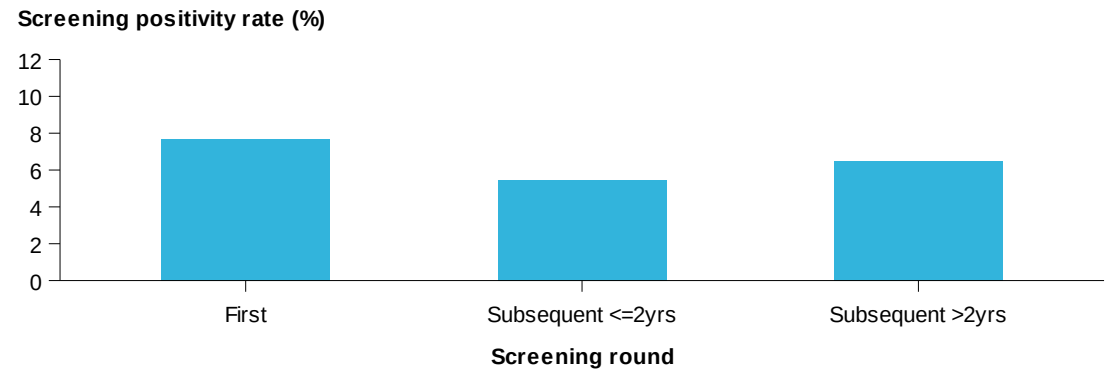
Screening round: The screening positivity rate was highest for people during their first round of screening (8% compared with 7% for those whose subsequent screen was more than 2 years after their first screen) (Figure 3.7).

Figure 3.6: Screening positivity rate of people aged 50–74, by sex and age, Australia, 2021



Source: Table A3.6.

Figure 3.7: Screening positivity rate of people aged 50–74, by screening round, Australia, 2021



Source: Table A3.7.

State and territory: The screening positivity rate was consistently between 6% and 7% across jurisdictions (Figure 3.8).

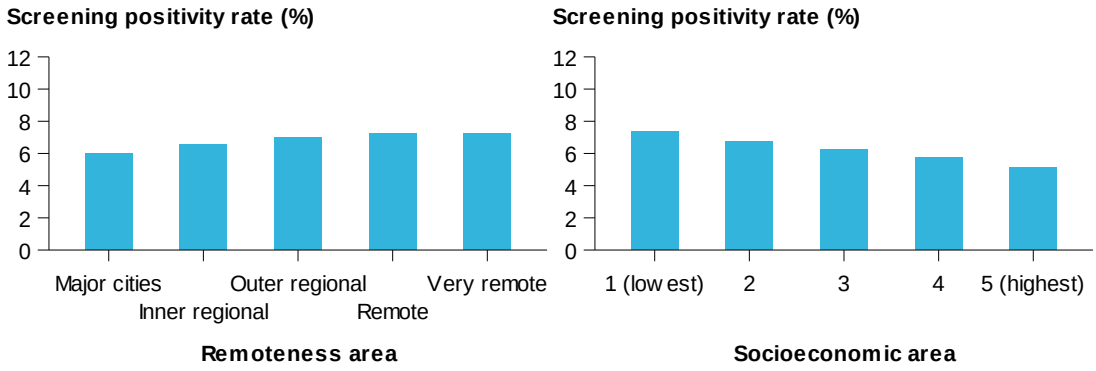
Figure 3.8: Screening positivity rate of people aged 50–74, by state and territory, Australia, 2021

Source: Table A3.8.

Remoteness area: The screening positivity rate was highest for people living in *Remote* and *Very remote* areas (7%) and lowest for those living in *Major cities* (6%) (Figure 3.9).

Socioeconomic area: The screening positivity rate was highest for people living in the lowest socioeconomic areas (7%) and lowest for those living in the highest socioeconomic areas (5%) (Figure 3.9).

Figure 3.9: Screening positivity rate of people aged 50–74, by remoteness area and socioeconomic area, Australia, 2021



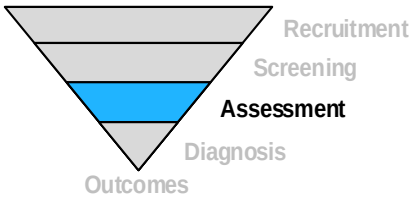
Source: Table A3.8.

Indigenous status: Indigenous Australians had a higher screening positivity rate than non-Indigenous Australians (9% compared with 6%, respectively) (Table A3.9).

Preferred language spoken at home: Those who preferred to speak a language other than English at home had the same screening positivity rate to those who spoke English at home (6% for both) (Table A3.9).

Disability status: Those reporting severe or profound activity limitation had a higher screening positivity rate than those not reporting such limitation (12% compared with 6%, respectively) (Table A3.9). Reasons for this difference are not well understood but may include a lower level of physical activity (Wolin et al. 2011) or comorbidities and medications that increase the likelihood of a positive iFOBT screening result in people with severe or profound activity limitation.

3.4 Assessment



PI 3 – Diagnostic assessment rate

Definition: The percentage of people who returned a positive NBCSP screening test (warranting further assessment) between **1 January 2021 and 31 December 2021** and had follow-up diagnostic assessment within that period or by **31 December 2022** (AIHW 2014b).

Rationale: The appropriate movement of people from participation to diagnostic assessment is a key indicator of the efficiency of the program and its impact in reducing morbidity and mortality from bowel cancer. While not all participants with a positive screen will necessarily have an assessment, according to the Population Based Screening Framework (Standing Committee on Screening 2018), systems should be in place to ensure timely follow-up to diagnostic assessment for individuals with a positive screening test.

Data quality: This indicator relies on information being returned to the NCSR; however, this reporting is not mandatory, and is known to be incomplete. Therefore, there is an unknown level of under-reporting for this indicator, and levels of under-reporting may differ across groups (for example, across jurisdictions, and across remoteness and socioeconomic areas). Participants with only an MBS claim for colonoscopy services are included (and assumed to have been performed in a private health-care setting), though outcomes from this colonoscopy source are not known. In this report, for the first time, colonoscopy data have also been supplemented with Participant follow-up function (PFUF) data for those who had a positive screening test. See 'Changes in monitoring the NBCSP' in Appendix C for further details.

Guide to interpretation: This indicator includes all people with a positive screen in the defined period, not all those invited in the defined period.

National diagnostic assessment rate: 86%.

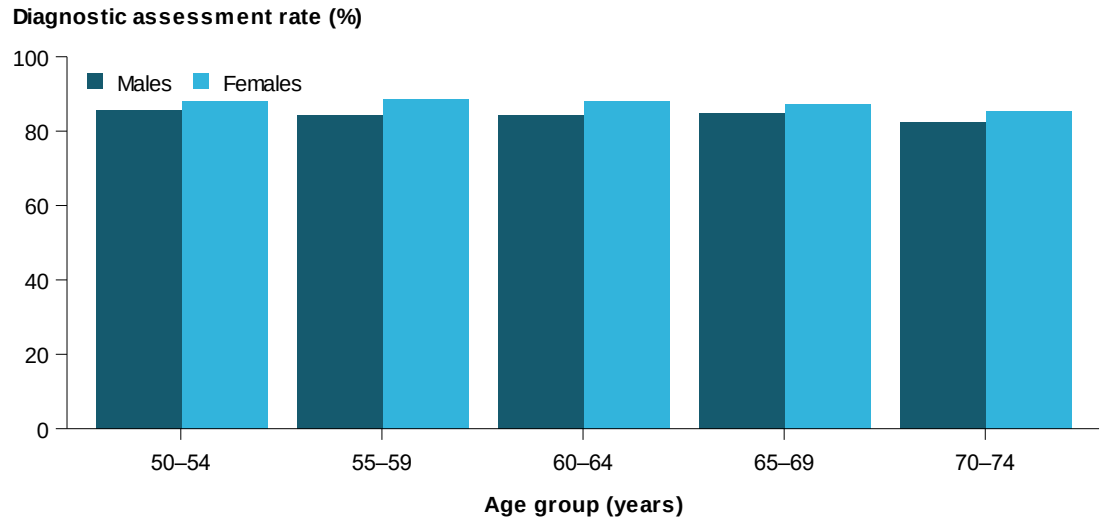
The following apply to the 76,880 participants with a positive screening test in 2021:

Australia-wide: A total of 65,766 people had a follow-up diagnostic assessment (colonoscopy) recorded – an overall Australia-wide diagnostic assessment rate of 86% (Table A3.10).

Sex and age: Diagnostic assessment rates were higher for females (87%) than males (84%) and were slightly lower for people aged 70–74 (84%) than for younger target age groups (86%–87% for age groups 50–54 to 65–69) (Figure 3.10).

Health-care provider: Most diagnostic assessments (56%; 36,881) recorded were performed through the private health-care system, with an additional 23% (15,046 assessments) recorded through the public health-care system (Table A3.11). The remaining 21% (13,839 diagnostic assessments) did not state through which system (public or private) the follow-up assessment was performed. As this indicator relies on information being reported back to the NCSR, and because reporting is not mandatory, differences in the performance of diagnostic assessments by public and private providers should be considered with caution.

Figure 3.10: Diagnostic assessment rate (colonoscopy) of people aged 50–74, by sex and age group, Australia, 2021



Notes

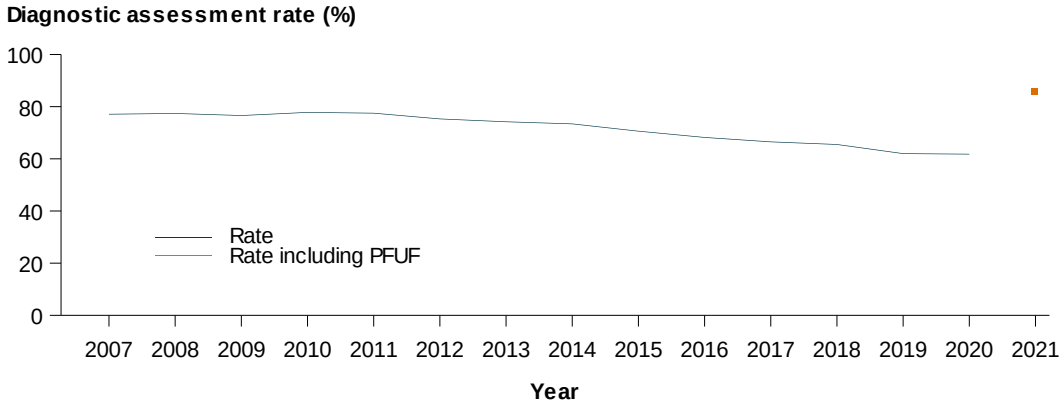
1. Calculation of the diagnostic assessment rate is based on the screening test date. In contrast, calculation of the PPVs and detection rates for both adenoma and carcinoma, and the hospital admission rate, are based on the diagnostic assessment date.
2. This indicator relies on information being reported back to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function data are now used to supplement missing colonoscopy form data and MBS claims. See 'Current reporting limitations' on page 4 for more details.

Source: Table A3.10.

Trend: Monitoring reports before 2016 used a different methodology to analyse the diagnostic assessment rate. This means that trend comparisons with rates published in those earlier reports cannot be made. To allow trends to be compared over time, the new indicator specifications have been applied retrospectively to earlier years of program data within this report (Figure 3.11). However, note that from 2021 colonoscopy form data and MBS claims have been supplemented with Participant follow-up function (PFUF) data, so direct comparisons between 2021 and earlier time periods should not be made.

State and territory: The follow-up diagnostic assessment rate was highest for people living in the Australian Capital Territory (90%) and lowest for those living in the New South Wales (83%) (Figure 3.12). Note that differences in form return and varying pathway practices for diagnostic assessment may affect the results across jurisdictions.

Figure 3.11: Diagnostic assessment rate (colonoscopy) of people aged 50–74, Persons, Australia, 2007–2021

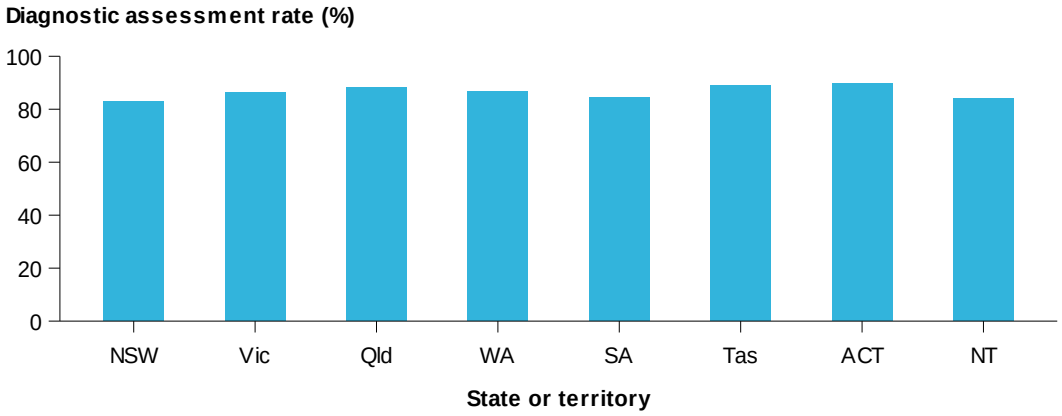


Notes

1. Calculation of the diagnostic assessment rate is based on the screening test date. In contrast, calculation of the PPVs and detection rates for both adenoma and carcinoma, and the hospital admission rate, is based on the diagnostic assessment date.
2. This indicator relies on information being reported to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. However, from 2021 Participant follow-up function data are now used to supplement missing colonoscopy form data and MBS claims. See 'Current reporting limitations' on page 4 for more details.
3. Trend data used the performance indicator specifications retrospectively on previous years' data.
4. As PFUF data are used from 2021 onwards to supplement missing colonoscopy form data, trend data prior to 2021 cannot be compared with newer time periods.

Source: Table A3.14.

Figure 3.12: Diagnostic assessment rate (colonoscopy) of people aged 50–74, by state and territory, Australia, 2021



Notes

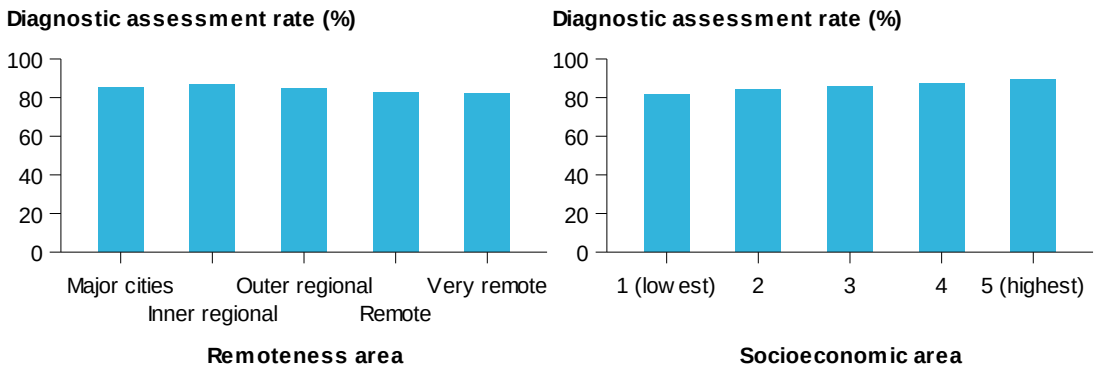
1. Calculation of the diagnostic assessment rate is based on the screening test date. In contrast, calculation of the PPVs and detection rates for both adenoma and carcinoma, and the hospital admission rate, is based on the diagnostic assessment date.
2. This indicator relies on information being reported back to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function data are now used to supplement missing colonoscopy form data and MBS claims. See 'Current reporting limitations' on page 4 for more details.
3. Differences across jurisdictions may involve differences in form return and varying pathway practices for diagnostic assessment.

Source: Table A3.12.

Remoteness area: The follow-up diagnostic assessment rate was highest for people living in *Inner regional areas* (87%) and lowest for people living in *Very remote* areas (82%) (Figure 3.13).

Socioeconomic area: The follow-up diagnostic assessment rate was highest for people living in the highest socioeconomic areas (90%) and lowest for those living in the lowest socioeconomic areas (82%) (Figure 3.13).

Figure 3.13: Diagnostic assessment rate (colonoscopy) of people aged 50–74, by remoteness area and socioeconomic area, Australia, 2021



Notes

1. Calculation of the diagnostic assessment rate is based on the screening test date. In contrast, calculation of the PPVs and detection rates for both adenoma and carcinoma, and the hospital admission rate, is based on the diagnostic assessment date.
2. This indicator relies on information being reported back to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function data are now used to supplement missing colonoscopy form data and MBS claims. See 'Current reporting limitations' on page 4 for more details.

Source: Table A3.12.

Indigenous status: Indigenous Australians had a lower follow-up diagnostic assessment rate than non-Indigenous Australians (77% compared with 86%, respectively) (Table A3.13).

Preferred language spoken at home: People who preferred to speak a language other than English at home had a lower follow-up diagnostic assessment rate than those who spoke English at home (81% compared with 86%, respectively) (Table A3.13).

Disability status: People reporting severe or profound activity limitation had a lower follow-up diagnostic assessment rate than those not reporting such limitation (68% compared with 88%, respectively) (Table A3.13).

PI 4 – Time between positive screen and diagnostic assessment

Definition: For those who received a positive NBCSP screening test (warranting further assessment) between **1 January 2021 and 31 December 2021**, the median time between the positive screen and a follow-up diagnostic assessment within that period or by **31 December 2022** (AIHW 2014b).

Rationale: Waiting for a definitive diagnosis after a positive screen can create anxiety. There are various steps, participant decisions, and waiting times that occur along the pathway between a positive screen and a diagnostic assessment. Therefore, this indicator should not be considered a hospital wait time indicator. However, after a positive screen, further diagnostic assessment should occur in a timely fashion as there is a defined risk of bowel cancer in those with a positive screening test – and any harms (such as anxiety) from a positive screen should be minimised.

Data quality: This indicator relies on information being reported to the NCSR; however, this reporting is not mandatory, and is known to be incomplete. Therefore, there is an unknown level of under-reporting for it, and levels of under-reporting may differ across groups (for example, across jurisdictions and across remoteness and socioeconomic areas). Participants with only an MBS claim for colonoscopy services are included (and assumed to have been performed in a private health-care setting), though outcomes from this colonoscopy source are not known. In this report, for the first time, colonoscopy data have been supplemented with Participant follow-up function (PFUF) data for those who had a positive screening test. See 'Changes in monitoring the NBCSP' in Appendix C for further details.

Guide to interpretation: This indicator includes all people with a positive screen in the defined period, not all those invited in the defined period.

Details of the number and proportion of participants for whom time between positive screen and diagnostic assessment was less than or equal to 30, 60, 120, 180, or 360 days, or greater, are included in tables A3.15–A3.17 (Appendix A), together with median time and 90th percentile information in tables A3.18–A3.22.

National median time between positive screen and diagnostic assessment: 58 days.

The following apply for the 76,880 participants who had a positive screening test in 2021 with a diagnostic assessment recorded:

Australia-wide: The median time between positive screen and assessment was 58 days (Table A3.18).

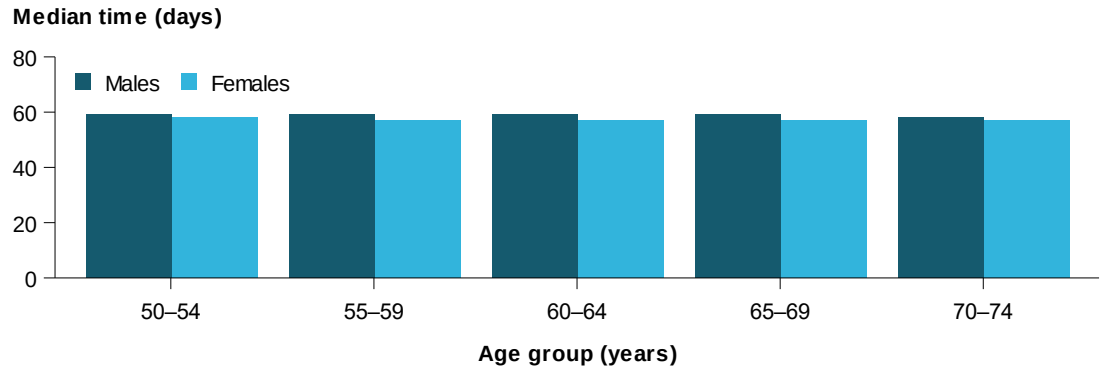
Sex: Males had longer median time between a positive screen and assessment than females (59 days and 57 days, respectively) (Figure 3.14).

Age: The median time between a positive screen and diagnostic assessment was 58 days across age groups (Figure 3.14).

Health-care provider: The median time between positive screen and diagnostic assessment for people who went through the private or public health-care systems was 47 and 83 days respectively (Table A3.19).

Around 21% of diagnostic assessments did not state through which system (public or private) the follow-up assessment was performed. As this indicator relies on information being reported back to the NCSR, and since reporting is not mandatory, differences in wait times by public and private providers should be considered with caution.

Figure 3.14: Median time (in days) between positive screen and diagnostic assessment of people aged 50–74, by sex and age, Australia, 2021

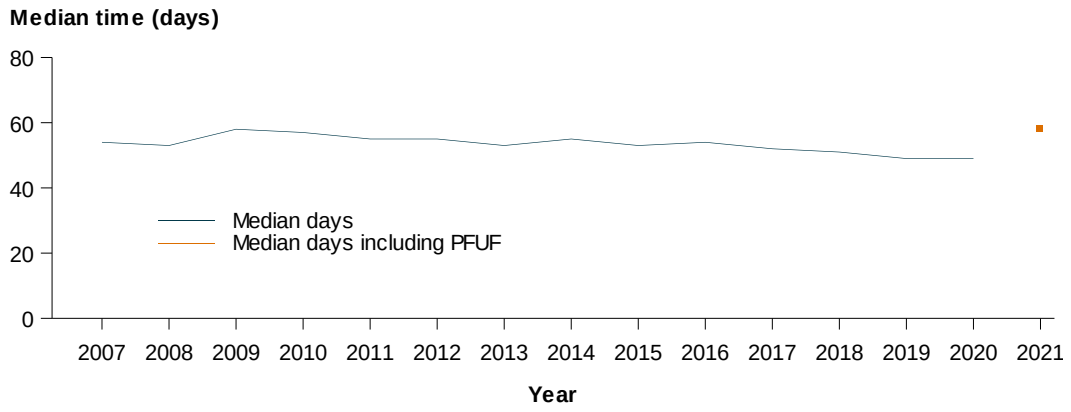


Note: This indicator relies on information being reported back to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function data are now used to supplement missing colonoscopy form data and MBS claims. See 'Current reporting limitations' on page 4 for more details.

Source: Table A3.18.

Trend: Monitoring reports before 2016 did not include this analysis, so trend comparisons with data from these earlier reports cannot be made. To allow trends to be compared over time, the new indicator specifications have been applied retrospectively to earlier years of program data within this report (Figure 3.15). However, note that from 2021 colonoscopy form data and MBS claims have been supplemented with Participant follow-up function (PFUF) data, so direct comparisons between 2021 and earlier time periods should not be made.

Figure 3.15: Median time (in days) between positive screen and diagnostic assessment of people aged 50–74, Persons, Australia, 2007–2021



Notes

1. This indicator relies on information being reported back to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function data are now used to supplement missing colonoscopy form data and MBS claims. See 'Current reporting limitations' on page 4 for more details.
2. Trend data used the performance indicator specifications retrospectively on previous years' data.
3. As PFUF data are used from 2021 onwards to supplement missing colonoscopy form data, trend data prior to 2021 cannot be compared with newer time periods.

Source: Table A3.22.

State and territory: The median time between a positive screen and diagnostic assessment was highest for people living in the Northern Territory (84 days) and lowest for those living in Victoria and Western Australia (52 days) (Figure 3.16). Note that differences in form return and varied pathway practices for diagnostic assessment may affect the results across jurisdictions.

Figure 3.16: Median time (in days) between positive screen and diagnostic assessment of people aged 50–74, by state and territory, Australia, 2021

Notes

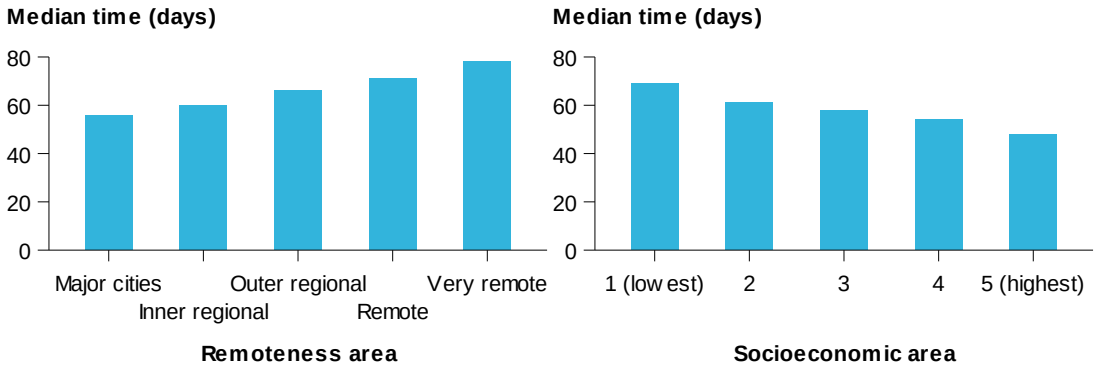
1. Differences across jurisdictions may involve differences in form return and varying pathway practices for diagnostic assessment.
2. This indicator relies on information being reported back to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function data are now used to supplement missing colonoscopy form data and MBS claims. See 'Current reporting limitations' on page 4 for more details.

Source: Table A3.20.

Remoteness area: The median time between a positive screen and diagnostic assessment was highest for people living in *Very remote* areas (78 days) and lowest for those in *Major cities* (56 days) (Figure 3.17).

Socioeconomic area: The median time between a positive screen and diagnostic assessment was highest for people living in the lowest socioeconomic areas (69 days) and lowest for those in the highest socioeconomic areas (48 days) (Figure 3.17).

Figure 3.17: Median time (in days) between positive screen and diagnostic assessment of people aged 50–74, by remoteness area and socioeconomic area, Australia, 2021



Notes

1. This indicator relies on information being reported back to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function data are now used to supplement missing colonoscopy form data and MBS claims. See 'Current reporting limitations' on page 4 for more details.
2. A participant's location may be divided across multiple remoteness areas proportionally. For PI 4, participants were assigned to their largest proportion remoteness area. See Appendix E for more information.

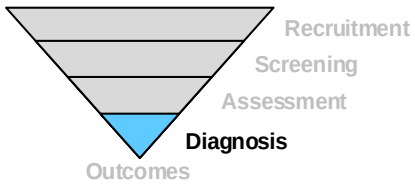
Source: Table A3.20.

Indigenous status: There was a longer median time between a positive screen and diagnostic assessment for Indigenous Australians (72 days) than for non-Indigenous Australians (57 days) (Table A3.21).

Preferred language spoken at home: Those who preferred to speak a language other than English at home had a longer median time between a positive screen and diagnostic assessment compared with those who spoke English at home (64 and 57 days, respectively) (Table A3.21).

Disability status: Participants reporting severe or profound activity limitation had a longer median time between a positive screen and diagnostic assessment (76 days) than those not reporting such limitation (57 days) (Table A3.21).

3.5 Diagnosis

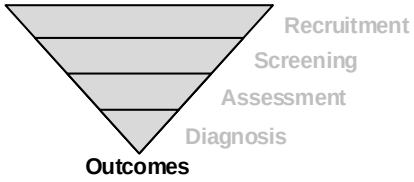


The diagnosis data available were not considered complete enough to allow formal reporting for the following performance indicators:

- PI 5a – Adenoma detection rate
- PI 5b – Positive predictive value of diagnostic assessment for detecting adenoma
- PI 6a – Colorectal cancer detection rate
- PI 6b – Positive predictive value of diagnostic assessment for detecting colorectal cancer. See *Analysis of bowel cancer outcomes for the National Bowel Cancer Screening Program 2018* (AIHW 2018b) for the most recent PPV of diagnostic assessment for detecting colorectal cancer.

See Chapter 4 for a summary of bowel abnormality detection results using available assessment and diagnosis data.

3.6 Outcomes



PI 9 – Adverse events – hospital admission

Definition: The rate at which people who had a diagnostic assessment between **1 January 2021 and 31 December 2021** were admitted to hospital within 30 days of their assessment (AIHW 2014b).

Rationale: As with any invasive procedure, there is the risk of an adverse event occurring with a colonoscopy. 'Maximising benefit and minimising harm' is an important tenet of population screening. Accordingly, it is important to report known harms from screening when monitoring the program's performance.

Data quality: Complete data for this indicator require linkage with hospital data, which is not currently performed. However, the NCSR does have non-mandatory information on adverse events for participants who had an assessment which will be used until a more complete data source becomes available. Therefore, there is currently an unknown level of under-reporting for this indicator.

In this report, for the first time, colonoscopy form and MBS claim data have been supplemented with Participant follow-up function (PFUF) data for those who had a positive screening test, increasing the number of known colonoscopies. See 'Changes in monitoring the NBCSP' in Appendix C for further details.

Guide to interpretation: This indicator includes all people who underwent a diagnostic assessment in the defined period, not all those invited in the defined period. Therefore, assessment counts here may differ to other indicators. As per the adverse event form, unplanned hospital admissions after a colonoscopy are recorded only if they occurred within 30 days of the procedure.

National hospital admission rate: 0.3 per 10,000 assessments.

The following apply to the 75,626 people who had a diagnostic assessment in 2021:

Australia-wide: Two people were admitted to hospital within 30 days of assessment, giving an overall Australia-wide hospital admission rate after assessment of 0.3 per 10,000 assessments (Table A3.23). Reporting of adverse events after a NBCSP colonoscopy is not mandatory so this rate may be underestimated.

Due to concerns about the level of data completeness, no other disaggregations are presented for this indicator.

PI 10 – Incidence of bowel cancer

Definition: The (estimated) incidence rate for bowel cancer per 100,000 estimated resident population aged 50–74 between **1 January 2023 and 31 December 2023** (AIHW 2014b).

Rationale: Incidence data provide contextual information about the number of new cases of bowel cancer in the population, which can inform NBCSP planning.

Data quality: Each Australian state and territory has legislation requiring mandatory reporting of cancer (excluding basal cell and squamous cell carcinomas of the skin). The 2019 Australian Cancer Database (ACD) used in this report contains data on cancers diagnosed up to and including the year 2019.

Guide to interpretation: The latest estimated incidence results (for 2023) are given where possible. However, estimated 2023 incidence numbers are not available for analysis by state and territory, by remoteness and socioeconomic areas, or by Indigenous status. Hence, for these stratifications, the latest actual data to 2019 (the latest year of complete data for all states and territories) are used.

National bowel cancer incidence rate: 103 new cases per 100,000 people aged 50–74.

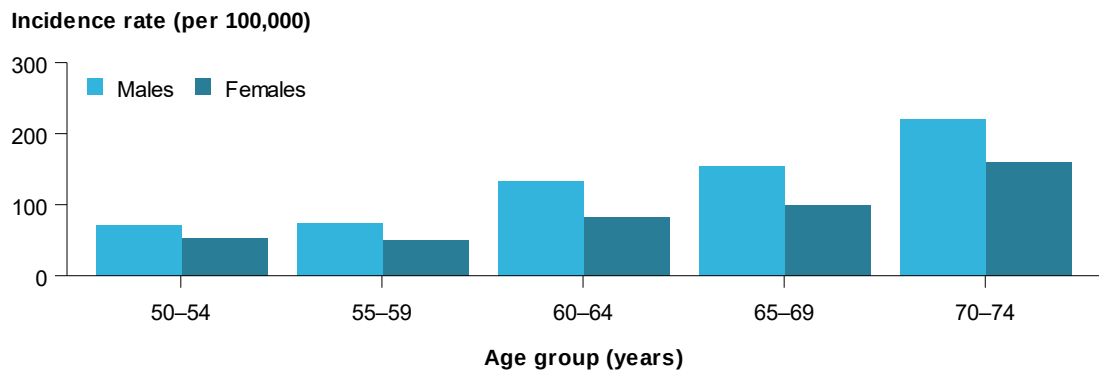
The following estimates were calculated for 2023:

Australia-wide: A total of 7,356 people aged 50–74 will be diagnosed with bowel cancer, giving a crude rate of 103 new cases per 100,000 people (Table A3.24).

Sex: Of people aged 50–74, men will be more likely to be diagnosed with bowel cancer than women (123 new cases per 100,000 males compared with 84 new cases per 100,000 females). When age standardised, rates for males and females will be 117 and 80 new cases, respectively, per 100,000 (Table A3.24).

Age: Bowel cancer incidence rates will be higher for older age groups. For people in the target age group, the estimated bowel cancer incidence rate will increase with age, from 62 new cases per 100,000 people aged 50–54 to 188 new cases per 100,000 people aged 70–74 (Figure 3.18).

Figure 3.18: Incidence rate of bowel cancer for people aged 50–74, by sex and age group, Australia, 2023



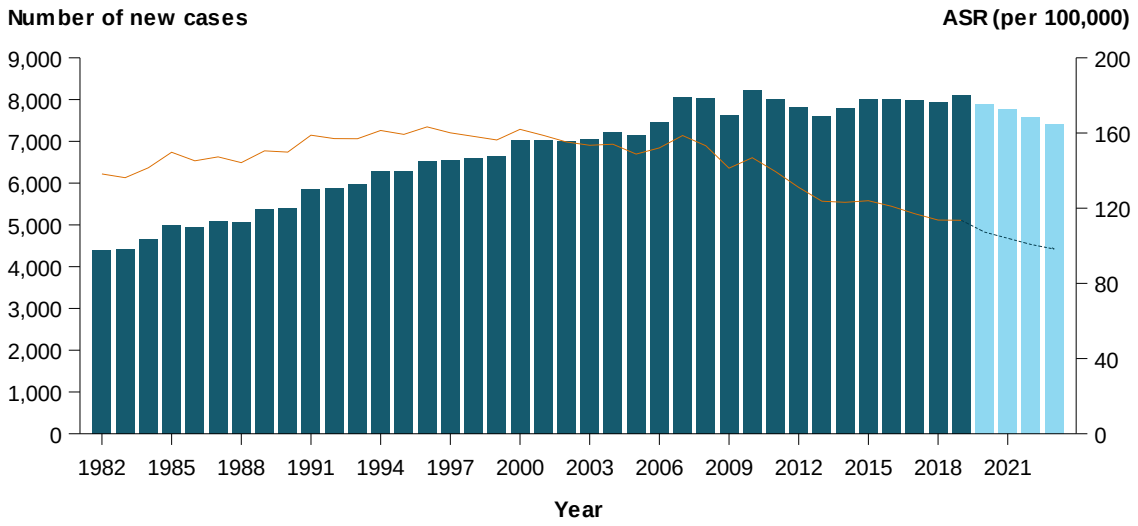
Notes

1. The 2023 estimates are based on 2010–2019 incidence data.
2. Age-specific rates are expressed per 100,000 people.
3. Bowel cancer includes ICD-10 codes C18–C20.

Source: Table A3.24.

Trend: Among people aged 50–74, the number of bowel cancer cases rose from 4,385 in 1982 to a peak of 8,215 in 2010. The number of cases has declined since then to an estimated 7,356 in 2023. The ASR for new cases (per 100,000 people aged 50–74) rose from 138 in 1982 to a peak of 163 in 1996 (Figure 3.19). Since then, the ASR has fallen and is expected to reach an ASR of 98 new cases per 100,000 in 2023. While the Australian population has increased and aged over time, the number of new bowel cancer cases and ASR of new cases are expected to continue to decline.

Figure 3.19: Trend in new cases of bowel cancer, people aged 50–74, Australia, 1982–2023



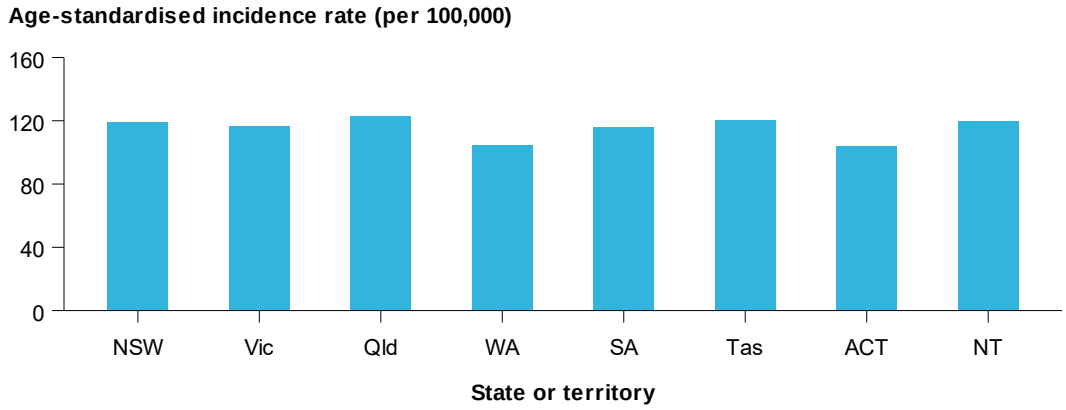
Notes

1. Estimated incidence data for 2020–2023 are based on 2010–2019 incidence data and may differ to actual incidence data due to current and ongoing program or practice changes, or COVID-19 pandemic effects.
2. The ACD currently contains data on all cases of cancer diagnosed from 1982 to 2019 for all states and territories.
3. Rates were age standardised to the Australian population as at 30 June 2001 and expressed per 100,000 people.
4. Bowel cancer includes ICD-10 codes C18–C20.

Source: Table A3.27.

State and territory: In the period 2015–2019, the rate of new cases of bowel cancer per 100,000 people aged 50–74 was highest in Tasmania (130 new cases of bowel cancer per 100,000 people) and lowest in the Australian Capital Territory (106 new cases per 100,000 people) (Table A3.25). The age-standardised rates by state and territory followed a similar pattern to the crude rates (Figure 3.20).

Figure 3.20: Incidence rate of bowel cancer for people aged 50–74, by state and territory, Australia, 2015–2019



Notes

1. Rates were age standardised to the Australian population as at 30 June 2001 and expressed per 100,000 people.
2. 'State or territory' refers to the state or territory of usual residence.
3. Bowel cancer includes ICD-10 codes C18–C20.

Source: Table A3.25.

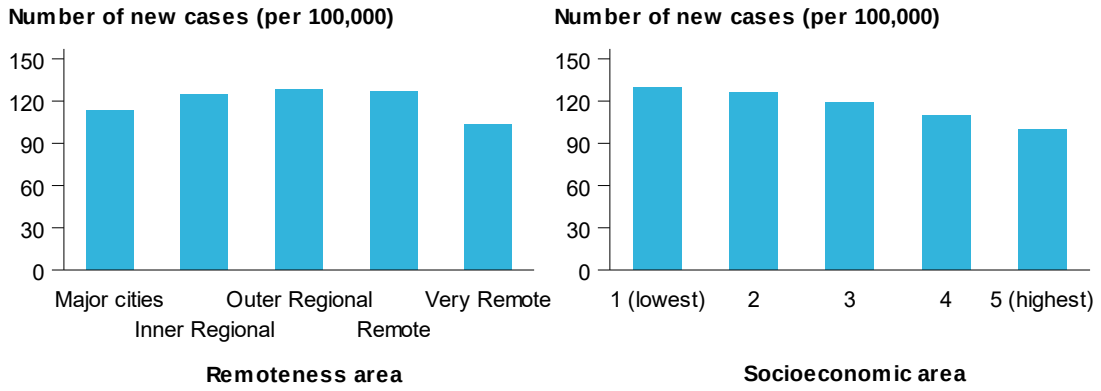
Remoteness area: In the period 2015–2019, incidence of bowel cancer per 100,000 people aged 50–74 differed by remoteness area. Age-standardised rates (ASR) are shown in Figure 3.21 and below.

The ASR for new cases of bowel cancer per 100,000 people aged 50–74 was highest for those living in *Outer regional* areas (128 new cases of bowel cancer per 100,000 people) and lowest for people living in *Very remote* areas (104 new cases per 100,000 people) (Figure 3.21).

Socioeconomic area: In the period 2015–2019, incidence of bowel cancer per 100,000 people aged 50–74 differed by socioeconomic area. Age-standardised rates are shown in Figure 3.21 and below.

The ASR for new cases of bowel cancer per 100,000 people aged 50–74 was highest for those living in the lowest socioeconomic areas (130 new cases of bowel cancer per 100,000 people) and lowest for people living in the highest socioeconomic areas (100 new cases per 100,000 people) (Figure 3.21).

Figure 3.21: Incidence rate of bowel cancer for people aged 50–74, by remoteness area and socioeconomic area, Australia, 2015–2019



Notes

1. Rates were age standardised to the Australian population as at 30 June 2001 and expressed per 100,000 people.
2. Remoteness was classified according to the Australian Statistical Geography Standard (ASGS) Remoteness Areas (see Appendix E).
3. Socioeconomic areas were classified using the ABS Index of Relative Socio-economic Disadvantage (IRSD) (see Appendix E).
4. The number of people in different remoteness or socioeconomic areas may not sum to the total due to rounding.
5. Bowel cancer includes ICD-10 codes C18–C20.

Source: Table A3.25.

Aboriginal and Torres Strait Islander people

Reliable national data on the diagnosis of 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. Information in the ACD on Indigenous status is considered to be of sufficient completeness for reporting for New South Wales, Victoria, Queensland, Western Australia, the Australian Capital Territory, and the Northern Territory.

While the majority (91%) of Indigenous Australians live in these 6 jurisdictions, the degree to which data for these jurisdictions are representative of data for all Indigenous Australians is unknown (ABS 2017). For the 6 jurisdictions analysed, 3% (1,231 records) of the relevant ACD records had unknown Indigenous status for bowel cancer diagnoses for people aged 50–74 in 2015–2019 (Table A3.26).

The incidence counts and rates for Indigenous and non-Indigenous Australians presented are under-estimated due to the relatively large proportion of people whose Indigenous status is not stated, or not available. Also, it is likely that some Indigenous Australians are misclassified as non-Indigenous Australians. Therefore, the estimates presented in this report should be interpreted with caution. In addition, age-standardised incidence rates should be used to compare the incidence of bowel cancer for Indigenous and non-Indigenous Australians to account for the different age structures of Indigenous and non-Indigenous populations. See Box 3.1 for information on Indigenous rates calculated using Indigenous population estimates from the 2016 Census.

Box 3.1: Indigenous Australians – incidence and mortality: populations and rates

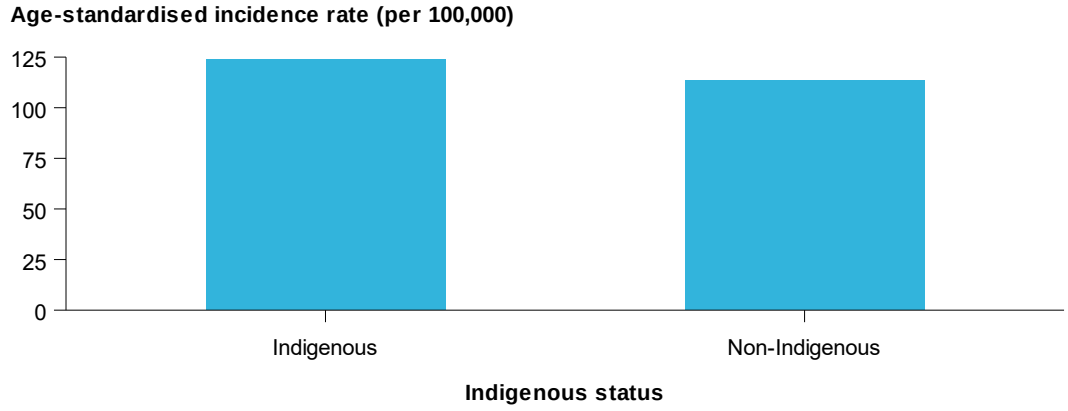
To derive bowel cancer incidence and mortality rates for Indigenous Australians, this report used Indigenous population estimates and projections based on the 2016 Census.

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 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.

In these 6 jurisdictions for 2015–2019, Indigenous Australians aged 50–74 had a crude rate of incidence of bowel cancer of 110 per 100,000. Following adjustment for differences in the age structure between the two population groups, the incidence of bowel cancer was higher for Indigenous Australians compared with non-Indigenous Australians (124 and 114 cases, respectively, per 100,000 people) (Figure 3.22).

Figure 3.22: Incidence rate of bowel cancer, by Indigenous status, 50–74 years, NSW, Vic, Qld, WA, ACT, and NT, 2015–2019



Notes

1. The rates were age standardised to the Australian population as at 30 June 2001 and expressed per 100,000 people.
2. Bowel cancer includes ICD-10 codes C18–C20.
3. See Box 3.1 for information on rates calculated using the 2016 Census.

Source: Table A3.26.

PI 11 – Mortality from bowel cancer

Definition: The (estimated) mortality rate for bowel cancer per 100,000 estimated resident population aged 50–74 between **1 January 2023 and 31 December 2023** (AIHW 2014b).

Rationale: Mortality data provide contextual information about trends in the level of bowel cancer mortality in the population, which can inform NBCSP planning.

Data quality: Cause of Death Unit Record File data are provided to the AIHW by the jurisdictional registrars of Births, Deaths and Marriages and the National Coronial Information System (managed by the Victorian Department of Justice) and include causes of death coded by the ABS. It is suspected that bowel cancer deaths are under-reported due to issues with death certificate coding (see Appendix D).

Monitoring reports for the NBCSP from 2019 onwards use ICD-10 codes C18–C20, and C26.0 when reporting deaths from bowel cancer using the NMD. This differs from the approach used for versions of the report before 2019 and will result in a greater number of deaths being attributed to bowel cancer (see Box 2.1).

Guide to interpretation: The latest estimated mortality results (for 2023) are given where possible. However, analysis by state and territory, by remoteness and socioeconomic areas, and Indigenous status use the latest actual mortality data (which were to 2021 at the time this report was prepared).

National bowel cancer mortality rate: 26 deaths per 100,000 people aged 50–74.

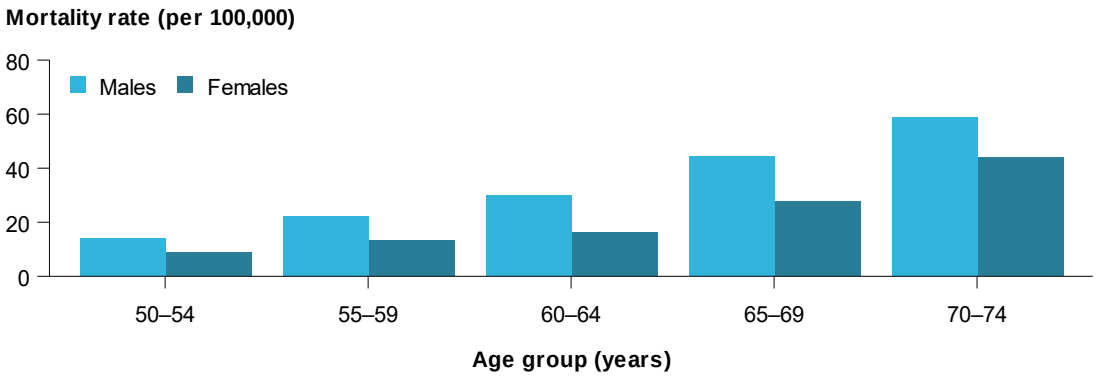
The following estimates were calculated for 2023:

Australia-wide: A total of 1,864 people aged 50–74 will die from bowel cancer, giving a crude rate of 26 deaths per 100,000 people (Table A3.28).

Sex: Males aged 50–74 will be more likely to die from bowel cancer than females (32 deaths per 100,000 males compared with 21 deaths per 100,000 females) (Figure 3.23). When age standardised, rates for males and females will be 30 and 19 deaths, respectively, per 100,000 (Table A3.28).

Age: The bowel cancer mortality rate will continue to be higher for older age groups (Table A3.28). For people in the target age range, the estimated bowel cancer mortality rate per 100,000 people rose from 12 deaths for those aged 50–54 to 51 deaths for those aged 70–74 (Figure 3.23).

Figure 3.23: Mortality rate from bowel cancer for people aged 50–74, by sex and age, Australia, 2023



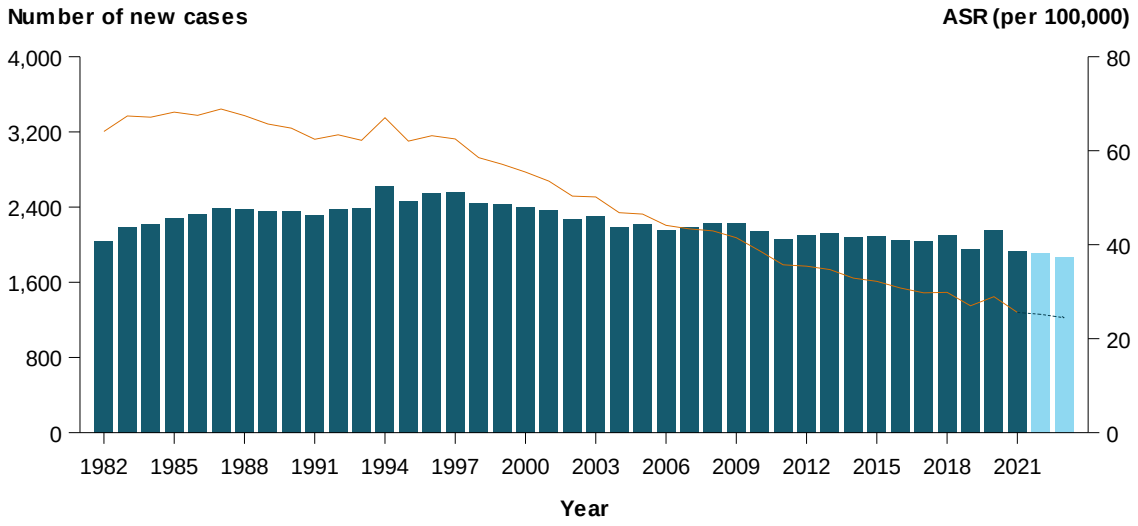
Notes

1. The 2023 estimates are based on 2012–2021 mortality data. See Appendix D for further information.
2. Age-specific rates are expressed per 100,000 people.

Source: Table A3.28.

Trend: Since 1987, the age-standardised mortality rate from bowel cancer per 100,000 people aged 50–74 has fallen from 69 to an estimated 25 deaths per 100,000 in 2023 (Figure 3.24). The number of deaths from bowel cancer peaked at 2,623 cases in 1994 and decreased to an estimated 1,864 in 2023. The overall effect of the increasing and ageing Australian population is that, while the age-standardised mortality rate has steadily fallen over time, the actual number of deaths has remained stable or slowly declined.

Figure 3.24: Trend in deaths from bowel cancer, people aged 50–74, Australia, 1982–2023



Notes

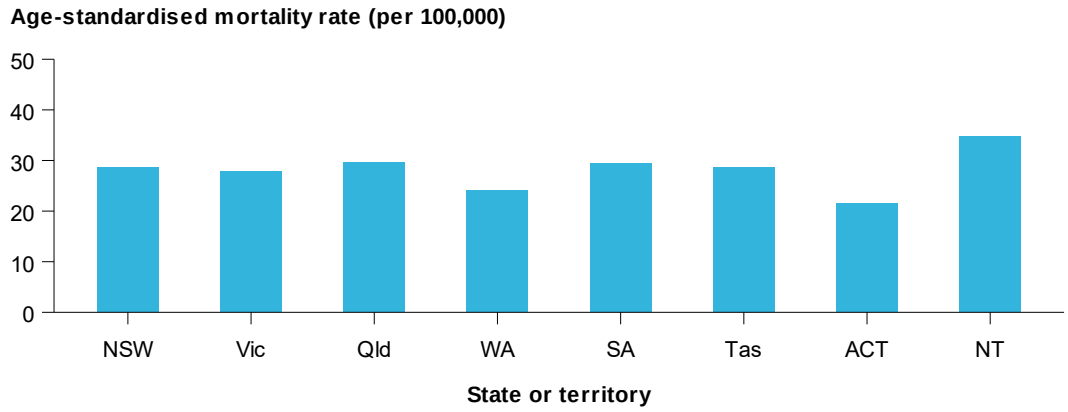
1. Estimated mortality data for 2022–2023 are based on 2012–2021 mortality data and may differ to actual mortality data due to current and ongoing program or practice changes, or COVID-19 pandemic effects. See Appendix D for further information.
2. Deaths registered in 2018 and earlier are based on the final version of cause of death data; deaths registered in 2019 are based on the revised version; and deaths registered in 2020–2021 are based on preliminary versions. Revised and preliminary versions are subject to further revision by the ABS.
3. Rates were age standardised to the Australian population as at 30 June 2001 and expressed per 100,000 people.

Source: Table A3.31.

The NBCSP started in 2006 and, from 2020, rollout of biennial screening for all eligible Australians in the target age group (50–74) was completed. Once the program has been in place for a number of years, and actual mortality data are available for 2022 onwards, it will be easier to quantify the program's impact on bowel cancer mortality. However, studies conducted by the AIHW of people diagnosed with bowel cancer in 2006–2008 showed that NBCSP invitees (particularly those who participated) diagnosed with bowel cancer had less risk of dying from the disease and were more likely to have less advanced cancers when diagnosed than non-invitees. These findings provide evidence that the NBCSP is contributing to reducing morbidity and mortality from bowel cancer in Australia (AIHW 2014a, 2018a, 2018b).

State and territory: In 2017–2021, the mortality rate per 100,000 people aged 50–74 was highest in the Northern Territory (33 deaths from bowel cancer) and lowest in Western Australia and the Australian Capital Territory (22 deaths) (Table A3.29). The age-standardised rates by state and territory followed a generally similar pattern to the crude rates (Figure 3.25).

Figure 3.25: Mortality rate from bowel cancer for people aged 50–74, by state and territory, Australia, 2017–2021



Notes

1. Rates were age standardised to the Australian population as at 30 June 2001 and expressed per 100,000 people.
2. Deaths registered in 2018 and earlier are based on the final version of cause of death data; deaths registered in 2019 are based on the revised version; and deaths registered in 2020–2021 are based on preliminary versions. Revised and preliminary versions are subject to further revision by the ABS.

Source: Table A3.29.

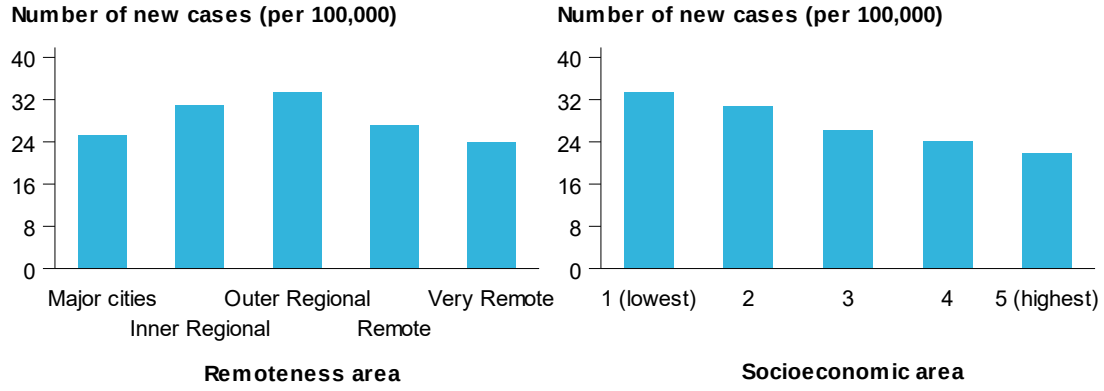
Remoteness area: In the period 2017–2021, mortality from bowel cancer per 100,000 people aged 50–74 differed by remoteness area. Age-standardised rates are shown in Figure 3.26 and below.

The ASR per 100,000 people aged 50–74 was highest for those living in *Outer Regional* areas (34 deaths from bowel cancer) and lowest for those living in *Very remote* areas (24 deaths) (Figure 3.26).

Socioeconomic area: In the period 2017–2021, mortality from bowel cancer per 100,000 people aged 50–74 differed by socioeconomic area. Age-standardised rates are shown in Figure 3.26 and below.

The ASR per 100,000 people aged 50–74 was highest for those living in the lowest socioeconomic areas (34 deaths from bowel cancer) and lowest for those living in the highest socioeconomic areas (22 deaths) (Figure 3.26).

Figure 3.26: Mortality rate from bowel cancer for people aged 50–74, by remoteness area and socioeconomic area, Australia, 2017–2021



Notes

1. Rates were age standardised to the Australian population as at 30 June 2001 and expressed per 100,000 people.
2. Deaths registered in 2018 and earlier are based on the final version of cause of death data; deaths registered in 2019 are based on the revised version; and deaths registered in 2020–2021 are based on preliminary versions. Revised and preliminary versions are subject to further revision by the ABS.
3. Remoteness was classified according to the ASGS Remoteness Areas (see Appendix E).
4. Socioeconomic areas were classified using the ABS IRSD (see Appendix E).

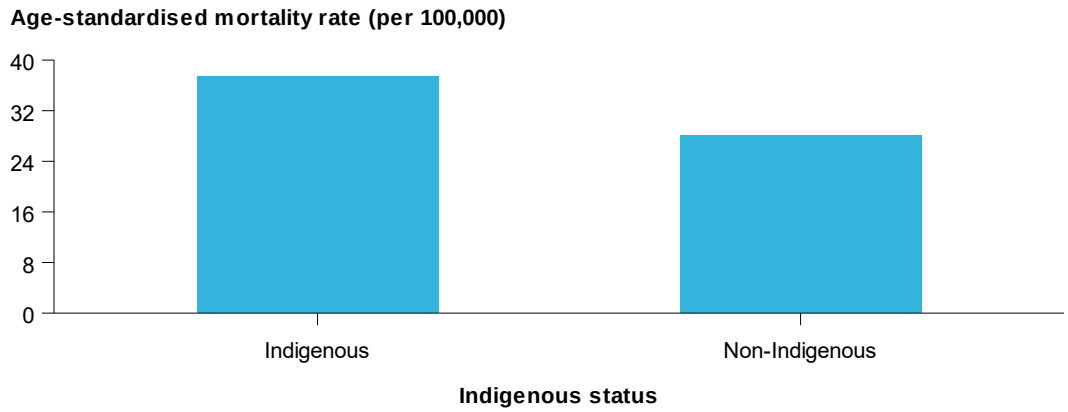
Source: Table A3.29.

Aboriginal and Torres Strait Islander people

Age-standardised mortality rates should be used to compare the mortality rate from bowel cancer between Indigenous and non-Indigenous Australians to account for the different age structures between the 2 populations. 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 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 3.1).

In these jurisdictions, for the period 2017–2021, Indigenous Australians aged 50–74 had a crude mortality rate of 33 per 100,000. Following adjustment for differences in age structure between the two population groups, mortality from bowel cancer was higher for Indigenous Australians compared with non-Indigenous Australians (ASRs per 100,000 people of 37 and 28 deaths, respectively, from bowel cancer) (Figure 3.27).

Figure 3.27: Mortality rate from bowel cancer, 50–74 years, by Indigenous status, NSW, Qld, WA, SA, and NT, 2017–2021



Notes

1. Rates were age standardised to the Australian population as at 30 June 2001 and expressed per 100,000 people.
2. Deaths registered in 2018 and earlier are based on the final version of cause of death data; deaths registered in 2019 are based on the revised version; and deaths registered in 2020–2021 are based on preliminary versions. Revised and preliminary versions are subject to further revision by the ABS.
3. See Box 3.1 for information on rates calculated using the 2016 Census.

Source: Table A3.30.

4 Bowel abnormality detection results

Diagnosis data were not considered complete enough to allow for formal performance indicator reporting of NBCSP diagnostic outcomes in Chapter 3. Instead, a summary of bowel abnormality detection results for those assessed in 2021 are presented here for information, using the available outcome data. In this report, for the first time, colonoscopy form data and MBS claims have been supplemented with Participant follow-up function (PFUF) data for those who had a positive screening test, increasing the number of known colonoscopies. However, colonoscopies known via PFUF reports (or MBS claims) have no accompanying outcome data so are excluded here. See 'Changes in monitoring the NBCSP' in Appendix C for further details.

4.1 Bowel abnormality detection using available assessment and histopathology data

Of the 75,626 participants who had a diagnostic assessment in 2021, 15,727 had outcome data. Of these:

- 83 (0.5%) had a bowel cancer detected and confirmed by histopathology
- 521 (3.3%) had a suspected bowel cancer at assessment that was still awaiting histopathological diagnosis
- 2,332 (14.8%) had an adenoma diagnosed by histopathology
- 6,771 (43.0%) had no adenoma or cancer recorded (includes those with no issue noted, or other diagnoses)
- 6,020 (38.3%) were still awaiting histopathology outcomes for a polyp biopsy sample (not suspected of being bowel cancer) (Table A4.1).

Rates of bowel cancer and adenoma detection differed by state and territory (Table A4.2). Differences across states and territories may be affected by differences in return rates of histopathology forms and should be interpreted with caution.

5 Spotlight on population groups

The NBCSP is monitored in relation to equity of access to relevant services for different population groups, including by geographical location, socioeconomic area, Indigenous status, preferred language spoken at home, and disability status. Routine monitoring of rates by various stratifications may reveal emerging trends for further investigation. This chapter provides a summary of performance indicators for 5 population subgroups. Note that there is large overlap of the Indigenous population with 2 of the other population subgroups presented here, due to higher proportions of Indigenous Australian participants living in the lowest socioeconomic areas and in *Very remote* areas.

5.1 Low socioeconomic areas

This section compares performance indicator results between the highest and lowest socioeconomic areas only. However, as noted in Chapter 3, across all performance indicators, there is a general gradient of increasingly poorer outcomes across the 5 socioeconomic groupings as socioeconomic disadvantage increases.

Australians living in the lowest socioeconomic areas had a lower participation rate than those living in the highest socioeconomic areas. Further, those that screened in the lowest socioeconomic areas experienced a higher screening positivity rate than those living in the highest socioeconomic areas, yet had a lower follow-up diagnostic assessment rate and a longer median time between a positive screen and an assessment.

Australians living in the lowest socioeconomic areas had higher age-standardised bowel cancer incidence and mortality rates than those living in the highest socioeconomic areas (Table 5.1).

Table 5.1: Summary of performance indicators for lowest and highest socioeconomic areas

Indicator		Summary of performance indicators for the lowest socioeconomic areas compared with the highest	Lowest socioeconomic areas	Highest socioeconomic areas
PI 1	Participation rate	Lower participation rate	36.6%	44.7%
PI 2	Screening positivity rate	Higher screening positivity rate	7%	5%
PI 3	Diagnostic assessment rate	Lower diagnostic assessment follow-up rate	82%	90%
PI 4	Time between positive screen and diagnostic assessment	Longer median time	69 days	48 days
PI 9	Adverse events – hospital admission	Comparison not published	n.p.	n.p.
PI 10	Incidence of bowel cancer	Higher age-standardised incidence rate	130 per 100,000	100 per 100,000
PI 11	Mortality from bowel cancer	Higher age-standardised mortality rate	34 per 100,000	22 per 100,000

Notes

1. The participation indicator PI 1 is reported against the period 2020–2021 with follow-up to June 2022. The screening indicator PI 2 is reported against the period 2021. The assessment indicators PIs 3 and 4 are reported against the period 2021 with follow-up to 31 December 2022. Incidence (PI 10) is reported for 2015–2019. Mortality (PI 11) is reported for 2017–2021.
2. Indicators PI 3–9 rely on information being reported back to the NCSR. As NBCSP forms are not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function (PFUF) data are now used to supplement missing colonoscopy form data and MBS claims.
3. PI 5a (adenoma detection rate), PI 5b (PPV of diagnostic assessment for detecting adenoma), PI 6a (colorectal cancer detection rate), PI 6b (PPV of diagnostic assessment for detecting colorectal cancer), PI 7 (interval cancer rate), and PI 8 (cancer clinico-pathological stage distribution) are not reported due to data incompleteness or unavailability.

Sources: AIHW ACD 2019; AIHW NMD; AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

5.2 Very remote

This section compares performance indicator results between *Major cities* and *Very remote* areas only. However, as noted in Chapter 3, both *Remote* and *Very remote* areas had poorer participation and higher positivity rates than all other areas.

Australians living in *Very remote* areas had a lower participation rate than those living in *Major cities*. They also experienced a higher screening positivity rate than Australians living in *Major cities* yet had a lower follow-up diagnostic assessment rate and a longer median time between a positive screen and an assessment.

Australians living in *Very remote* areas had a lower age-standardised bowel cancer incidence rate and the same age-standardised mortality rate than those living in *Major cities* (Table 5.2). The highest incidence and mortality rates were observed for Australians living in *Outer regional* areas.

Table 5.2: Summary of performance indicators for *Very remote* and *Major cities* areas

Indicator		Summary of performance indicators for *Very remote* areas compared with *Major cities*	*Very remote*	*Major cities*
PI 1	Participation rate	Lower participation rate	25.3%	40.6%
PI 2	Screening positivity rate	Higher screening positivity rate	7%	6%
PI 3	Diagnostic assessment rate	Lower diagnostic assessment follow-up rate	82%	85%
PI 4	Time between positive screen and diagnostic assessment	Longer median time	78 days	56 days
PI 9	Adverse events – hospital admission	Comparison not published	n.p.	n.p.
PI 10	Incidence of bowel cancer	Lower age-standardised incidence rate	104 per 100,000	113 per 100,000
PI 11	Mortality from bowel cancer	Same age-standardised mortality rate	24 per 100,000	25 per 100,000

Notes

1. The participation indicator PI 1 is reported against the period 2020–2021 with follow-up to June 2022. The screening indicator PI 2 is reported against the period 2021. The assessment indicators PIs 3 and 4 are reported against the period 2021 with follow-up to 31 December 2022. Incidence (PI 10) is reported for 2015–2019. Mortality (PI 11) is reported for 2017–2021.
2. Indicators 3–9 rely on information being reported back to the NCSR. As NBCSP forms are not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function (PFUF) data are now used to supplement missing colonoscopy form data and MBS claims.
3. PI 5a (adenoma detection rate), PI 5b (PPV of diagnostic assessment for detecting adenoma), PI 6a (colorectal cancer detection rate), PI 6b (PPV of diagnostic assessment for detecting colorectal cancer), PI 7 (interval cancer rate), and PI 8 (cancer clinico-pathological stage distribution) are not reported due to data incompleteness or unavailability.

Sources: AIHW ACD 2019; AIHW NMD; AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

5.3 Aboriginal and Torres Strait Islander people

Indigenous Australians had a lower estimated participation rate than non-Indigenous Australians. They also experienced a higher screening positivity rate yet had a lower follow-up diagnostic assessment rate and a longer median time between a positive screen and an assessment. Indigenous Australians had similar age-standardised bowel cancer incidence and higher mortality rates as non-Indigenous Australians (Table 5.3).

Reasons for differences in screening outcomes between Indigenous and non-Indigenous Australians are not known; however, higher proportions of Indigenous Australians live in *Remote* and *Very remote* locations and in lower socioeconomic areas, where access to relevant services can be an issue, may be contributing factors.

Table 5.3: Summary of performance indicators for Indigenous and non-Indigenous Australians

Indicator		Summary of performance indicators for Indigenous Australians compared with non-Indigenous Australians	Indigenous	Non-Indigenous
PI 1	Participation rate[(a)]	Lower participation rate	31.3%	41.4%
PI 2	Screening positivity rate	Higher screening positivity rate	9%	6%
PI 3	Diagnostic assessment rate	Lower diagnostic assessment follow-up rate	77%	86%
PI 4	Time between positive screen and diagnostic assessment	Longer median time	72 days	57 days
PI 9	Adverse events – hospital admission	Comparison not published	n.p.	n.p.
PI 10	Incidence of bowel cancer[(b)(c)]	Similar age-standardised incidence rate	124 per 100,000	114 per 100,000
PI 11	Mortality from bowel cancer[(c)(d)]	Higher age-standardised mortality rate	37 per 100,000	28 per 100,000

(a) Participation rates by Indigenous status were estimated using 2021 Census proportions (see Appendix F for more information).

(b) Includes only New South Wales, Victoria, Queensland, Western Australia, the Australian Capital Territory, and the Northern Territory.

(c) These rates were calculated using Indigenous population based on the 2016 Census and should not be compared with rates calculated using populations based on previous Censuses. See Box 3.1 for more information.

(d) Includes only New South Wales, Queensland, Western Australia, South Australia and the Northern Territory.

Notes

1. The participation indicator PI 1 is reported against the period 2020–2021 with follow-up to June 2022. The screening indicator PI 2 is reported against the period 2021. The assessment indicators PIs 3 and 4 are reported against the period 2021 with follow-up to 31 December 2022. Incidence is reported for 2015–2019. Mortality is reported for 2017–2021.
2. Indicators 3–9 rely on information being reported back to the NCSR. As NBCSP forms are not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function (PFUF) data are now used to supplement missing colonoscopy form data and MBS claims.
3. PI 5a (adenoma detection rate), PI 5b (PPV of diagnostic assessment for detecting adenoma), PI 6a (colorectal cancer detection rate), PI 6b (PPV of diagnostic assessment for detecting colorectal cancer), PI 7 (interval cancer rate), and PI 8 (cancer clinico-pathological stage distribution) are not reported due to data incompleteness or unavailability.
4. The incidence counts and rates for Indigenous and non-Indigenous Australians presented are underestimates due to the relatively large proportion of people whose Indigenous status is not stated. Also, it is likely that some Indigenous Australians are misclassified as non-Indigenous. Therefore, the estimates presented should be interpreted with caution.
5. Bowel cancer incidence and mortality rates for Indigenous and non-Indigenous populations are compared using age-standardised rates to account for the different age structures of these populations.

Sources: 2021 Census data; AIHW ACD 2019; AIHW NMD; AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

5.4 Preferred language spoken at home

Australians who preferred to speak a language other than English at home had a lower participation rate than those who spoke English. They experienced the same screening positivity rate; however, those with a positive screening result had a lower follow-up diagnostic assessment rate and longer median time between a positive screen and an assessment (Table 5.4).

Table 5.4: Summary of performance indicators for English speakers and those who preferred to speak a language other than English (LOTE) at home

Indicator		Summary of performance indicators for those who preferred language other than English at home compared with English speakers	LOTE	English
PI 1	Participation rate[(a)]	Lower participation rate	25.1–32.1%	42.8–45.6%
PI 2	Screening positivity rate	Lower screening positivity rate	6%	6%
PI 3	Diagnostic assessment rate	Lower diagnostic assessment follow-up rate	81%	86%
PI 4	Time between positive screen and diagnostic assessment	Longer median time	64 days	57 days
PI 9	Adverse events – hospital admission	Comparison not published	n.p.	n.p.
PI 10	Incidence of bowel cancer[(b)]	Comparison not available	n.a.	n.a.
PI 11	Mortality from bowel cancer[(b)]	Comparison not available	n.a.	n.a.

(a) Participation rates by preferred language spoken at home were estimated using 2021 Census proportions (see Table A5.1 and Appendix F for more information).

(b) Data for this indicator are not available.

Notes

1. The participation indicator PI 1 is reported against the period 2020–2021 with follow-up to June 2022. The screening indicator PI 2 is reported against the period 2021. The assessment indicators PIs 3 and 4 are reported against the period 2021 with follow-up to 31 December 2022. Incidence and mortality data are not currently available for reporting by preferred language spoken at home.
2. Indicators 3–9 rely on information being reported back to the NCSR. As NBCSP forms are not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function (PFUF) data are now used to supplement missing colonoscopy form data and MBS claims.
3. PI 5a (adenoma detection rate), PI 5b (PPV of diagnostic assessment for detecting adenoma), PI 6a (colorectal cancer detection rate), PI 6b (PPV of diagnostic assessment for detecting colorectal cancer), PI 7 (interval cancer rate), and PI 8 (cancer clinico-pathological stage distribution) are not reported due to data incompleteness or unavailability.

Sources: 2021 Census data; AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

5.5 Disability status

Australians with severe or profound disability participated at a lower rate than other participants (including those who reported no limitation and those who did not respond). They also experienced a higher screening positivity rate, yet had a lower follow-up diagnostic assessment rate, and a longer median time between a positive screen and an assessment than those not reporting such limitation (Table 5.5).

Table 5.5: Summary of performance indicators for those with severe or profound activity limitation and those without severe or profound activity limitation

Indicator		Summary of performance indicators for those with severe or profound disability compared with those without severe or profound disability	Severe or profound activity limitation reported	No severe or profound activity limitation reported
PI 1	Participation rate[(a)]	Comparison not published	n.p.	n.p.
PI 2	Screening positivity rate	Higher screening positivity rate	12%	6%
PI 3	Diagnostic assessment rate	Lower diagnostic assessment follow-up rate	68%	88%
PI 4	Time between positive screen and diagnostic assessment	Longer median time	76 days	57 days
PI 9	Adverse events – hospital admission	Comparison not published	n.p.	n.p.
PI 10	Incidence of bowel cancer[(b)]	Comparison not available	n.a.	n.a.
PI 11	Mortality from bowel cancer[(b)]	Comparison not available	n.a.	n.a.

(a) Estimates of participation rates by disability status could not be reported in the current report due to changes in completeness of disability status information in the NCSR (see Appendix C and Appendix F for more information).

(b) Data for this indicator are not available.

Notes

1. The participation indicator PI 1 is reported against the period 2020–2021 with follow-up to June 2022. The screening indicator PI 2 is reported against the period 2021. The assessment indicators PIs 3 and 4 are reported against the period 2021 with follow-up to 31 December 2022. Incidence and mortality data are not currently available for reporting by disability status.
2. Indicators 3–9 rely on information being reported back to the NCSR. As NBCSP forms are not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function (PFUF) data are now used to supplement missing colonoscopy form data and MBS claims.
3. PI 5a (adenoma detection rate), PI 5b (PPV of diagnostic assessment for detecting adenoma), PI 6a (colorectal cancer detection rate), PI 6b (PPV of diagnostic assessment for detecting colorectal cancer), PI 7 (interval cancer rate), and PI 8 (cancer clinico-pathological stage distribution) are not reported due to data incompleteness or unavailability.

Sources: 2021 Census data; AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Appendix A: Data tables

Additional tables for Chapter 2

Table A2.1: Five-year relative survival from bowel cancer, by age group and sex, Australia, 2015–2019

	Males	Females	Persons
Age group (years)	**5-year relative survival (%)**	**5-year relative survival (%)**	**5-year relative survival (%)**
0–4	n.p.	n.p.	n.p.
5–9	n.p.	n.p.	n.p.
10–14	91.6	100.1	97.1
15–19	97.6	98.6	98.3
20–24	92.2	97.3	95.3
25–29	75.2	79.4	77.5
30–34	74.8	80.4	77.6
35–39	78.3	78.6	78.5
40–44	73.8	77.6	75.6
45–49	73.3	73.6	73.4
50–54	75.8	78.6	77.1
55–59	73.8	77.8	75.5
60–64	74.2	76.1	75.0
65–69	73.1	76.1	74.3
70–74	72.8	74.4	73.5
75–79	67.0	69.8	68.3
80–84	63.7	67.7	65.7
85+	51.8	57.0	54.8
50–74	*73.6*	*76.2*	*74.7*
All ages	**70.1**	**72.0**	**70.9**

Source: Australian Institute of Health and Welfare (AIHW) Australian Cancer Database (ACD) 2019.

Table A2.2: Trend in 5-year relative survival from bowel cancer, people aged 50–74 at diagnosis, Australia, 1985–1989 to 2015–2019

Year	5-year relative survival (%)
1985–1989	52.1
1990–1994	56.4
1995–1999	60.2
2000–2004	65.4
2005–2009	69.0
2010–2014	73.4
2015–2019	74.7

Source: AIHW ACD 2019.

Table A2.3: Relative survival at diagnosis and 5-year conditional relative survival from bowel cancer, people aged 50–74 at diagnosis, Australia, 2015–2019

	Relative survival	Conditional survival	
Years after diagnosis	Relative survival (%)	Years already survived	5-year conditional relative survival (%)
1	91.1	. .	. .
2	85.0	. .	. .
3	80.4	. .	. .
4	77.2	. .	. .
5	74.7	0	74.7
6	72.9	1	80.0
7	71.4	2	84.0
8	70.4	3	87.6
9	69.4	4	89.9
10	68.8	5	92.1
11	68.0	6	93.3
12	67.4	7	94.4
13	66.9	8	95.0
14	66.3	9	95.5
15	65.7	10	95.5
16	65.2	11	95.8
17	64.7	12	96.0
18	64.0	13	95.6
19	63.6	14	96.0
20	62.9	15	95.8

Source: AIHW ACD 2019.

Table A2.4: Change in fatal burden – years of life lost (YLL) from bowel cancer, age-specific rate (per 1,000 people), Australia, 2003, 2011, 2015, 2018, and 2022

Age group (years)	Year				
	2003	2011	2015	2018	2022
30–34	0.7	0.5	1.2	0.9	0.9
35–39	0.9	1.1	1.1	1.4	1.0
40–44	2.2	1.7	2.0	2.0	1.5
45–49	4.0	2.9	3.3	2.7	2.5
50–54	5.8	4.2	5.3	4.8	3.9
55–59	9.2	6.5	6.0	6.5	5.2
60–64	14.6	10.1	8.8	8.0	7.3
65–69	17.3	12.6	11.2	10.1	9.1
70–74	20.7	15.4	12.5	11.2	10.9
75–79	22.2	19.1	17.3	14.8	14.0
80–84	21.2	19.0	18.6	16.2	15.3
85–89	19.6	18.5	18.7	17.0	15.3
90–94	17.2	17.3	16.2	16.2	14.2
95–99	12.6	12.2	14.0	11.0	11.5
100+	4.8	8.0	9.5	9.0	8.3

Source: AIHW Australian Burden of Disease Database.

Additional tables for Chapter 3

Recruitment

Table A3.1: Screening invitations including opt-out, deferred and skip-round status of people aged 50–74, by sex and age group, Australia, 2020–2021

Sex	Age (years)	Invitations issued to eligible population[(a)] (N)	Persons deferred[(b)] (N)	Persons opted out [(c)] (N)	Persons skipped a round[(d)] (N)	Persons deferred, skipped, and opted out (N)	Persons deferred, skipped, and opted out (%)	Invitations (minus opted out and deferred) (N)
Males	50–54	955,723	1,398	1,610	45,552	48,560	5.1	907,163
	55–59	590,733	1,005	935	40,770	42,710	7.2	548,023
	60–64	761,771	1,737	1,562	59,660	62,959	8.3	698,812
	65–69	442,663	1,530	1,412	43,890	46,832	10.6	395,831
	70–74	546,361	1,870	2,977	50,002	54,849	10.0	491,512
	50–74	*3,297,251*	*7,540*	*8,496*	*239,874*	*255,910*	*7.8*	*3,041,341*
Females	50–54	973,469	1,940	2,002	63,286	67,228	6.9	906,241
	55–59	594,521	1,215	1,024	54,298	56,537	9.5	537,984
	60–64	780,438	2,361	1,686	72,863	76,910	9.9	703,528
	65–69	460,132	2,069	1,390	52,871	56,330	12.2	403,802
	70–74	560,372	2,397	2,864	57,028	62,289	11.1	498,083
	50–74	*3,368,932*	*9,982*	*8,966*	*300,346*	*319,294*	*9.5*	*3,049,638*
Persons	50–54	1,929,192	3,338	3,612	108,838	115,788	6.0	1,813,404
	55–59	1,185,254	2,220	1,959	95,068	99,247	8.4	1,086,007
	60–64	1,542,209	4,098	3,248	132,523	139,869	9.1	1,402,340
	65–69	902,795	3,599	2,802	96,761	103,162	11.4	799,633
	70–74	1,106,733	4,267	5,841	107,030	117,138	10.6	989,595
	50–74	**6,666,183**	**17,522**	**17,462**	**540,220**	**575,204**	**8.6**	**6,090,979**

(a) Invitations issued excludes 453,970 people that did not have a valid mailing address in the NCSR.

(b) Invitees from the eligible population who would like to participate in the National Bowel Cancer Screening Program (NBCSP) but have advised they are unable to do so at this time. These invitees will be contacted once the nominated deferral period has elapsed.

(c) Invitees from the eligible population who have advised that they do not wish to participate in the NBCSP, now or in the future. Invitees who opt out will not be contacted again. Invitees may elect to opt back in at a later date.

(d) Invitees from the eligible population who have had a recent colonoscopy (in the last 2 years) are notified that they will skip a round of the NBCSP rather than being sent an immunochemical faecal occult blood test (iFOBT) screening invitation (from November 2019).

Source: AIHW analysis of the National Cancer Screening Register (NCSR) as at 31 December 2022 (NCSR raw data extract [RDE] 14/01/2023).

Table A3.2: Participation of people aged 50–74, by sex and age, Australia, 2020–2021

Sex	Age (years)	Returned completed screening test (N)	Invitations (minus opted out, skipped, and deferred) (N)	Participation (%)
Males	50–54	271,690	907,163	29.9
	55–59	186,554	548,023	34.0
	60–64	282,568	698,812	40.4
	65–69	190,608	395,831	48.2
	70–74	252,944	491,512	51.5
	50–74	*1,184,364*	*3,041,341*	*38.9*
Females	50–54	301,763	906,241	33.3
	55–59	208,915	537,984	38.8
	60–64	320,013	703,528	45.5
	65–69	211,997	403,802	52.5
	70–74	263,213	498,083	52.8
	50–74	*1,305,901*	*3,049,638*	*42.8*
Persons	50–54	573,453	1,813,404	31.6
	55–59	395,469	1,086,007	36.4
	60–64	602,581	1,402,340	43.0
	65–69	402,605	799,633	50.3
	70–74	516,157	989,595	52.2
	50–74	**2,490,265**	**6,090,979**	**40.9**

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Table A3.3: Participation of people aged 50–74, by invitation round, previous participation and age group, Australia, 2020–2021

Invitation round	Age (years)	Returned completed screening test (N)	Invitations (minus opted out, skipped, and deferred) (N)	Participation (%)
People who participated for the first time				
First invitation	50–54	228,131	748,193	30.5
	55–59	3,307	12,432	26.6
	60–64	3,410	11,366	30.0
	65–69	1,978	6,968	28.4
	70–74	2,345	9,647	24.3
	50–74	*239,171*	*788,606*	*30.3*
Subsequent invitation	50–54	104,178	723,201	14.4
	55–59	75,876	621,258	12.2
	60–64	69,034	656,315	10.5
	65–69	36,404	313,140	11.6
	70–74	46,971	387,730	12.1
	50–74	*332,463*	*2,701,644*	*12.3*
People who have previously participated				
People who have previously participated in any invitation round				
Subsequent invitation	50–54	241,144	342,010	70.5
	55–59	316,286	452,317	69.9
	60–64	530,137	734,659	72.2
	65–69	364,223	479,525	76.0
	70–74	466,841	592,218	78.8
	50–74	*1,918,631*	*2,600,729*	*73.8*
People who participated in their previous invitation round				
Subsequent invitation	50–54	234,234	324,294	72.2
	55–59	277,053	358,066	77.4
	60–64	462,613	561,191	82.4
	65–69	323,687	378,765	85.5
	70–74	427,621	499,442	85.6
	50–74	*1,725,208*	*2,121,758*	*81.3*

(continued)

Table A3.3 (continued): Participation of people aged 50–74, by invitation round, previous participation and age group, Australia, 2020–2021

Invitation round	Age (years)	Returned completed screening test (N)	Invitations (minus opted out, skipped, and deferred) (N)	Participation (%)
Total				
First invitation	50–54	228,131	748,193	30.5
	55–59	3,307	12,432	26.6
	60–64	3,410	11,366	30.0
	65–69	1,978	6,968	28.4
	70–74	2,345	9,647	24.3
	50–74	*239,171*	*788,606*	*30.3*
Subsequent invitation	50–54	345,322	1,065,211	32.4
	55–59	392,162	1,073,575	36.5
	60–64	599,171	1,390,974	43.1
	65–69	400,627	792,665	50.5
	70–74	513,812	979,948	52.4
	50–74	*2,251,094*	*5,302,373*	*42.5*
All	50–54	573,453	1,813,404	31.6
	55–59	395,469	1,086,007	36.4
	60–64	602,581	1,402,340	43.0
	65–69	402,605	799,633	50.3
	70–74	516,157	989,595	52.2
	50–74	**2,490,265**	**6,090,979**	**40.9**

Notes

1. Subsequent invitation round includes second, third, and subsequent invitation rounds.
2. Previous invitation round is the round immediately before the current invitation (usually 2 years prior).

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Table A3.4: Participation of people aged 50–74, by state and territory, remoteness area, and socioeconomic area, Australia, 2020–2021

Area		Returned completed screening test (N)	Invitations (minus opted out and deferred) (N)	Participation rate (%)
State and territory	NSW	780,992	1,975,115	39.5
	Vic	675,167	1,537,355	43.9
	Qld	452,827	1,207,599	37.5
	WA	261,539	630,864	41.5
	SA	199,852	449,955	44.4
	Tas	66,467	149,621	44.4
	ACT	41,768	94,894	44.0
	NT	11,653	45,576	25.6
Remoteness area[(a)]	Major cities	1,694,778	4,174,227	40.6
	Inner regional	540,064	1,243,940	43.4
	Outer regional	220,575	558,395	39.5
	Remote	22,732	69,858	32.5
	Very remote	7,904	31,219	25.3
	Unknown	4,211	13,340	31.6
Socioeconomic area[(a)]	1 (lowest)	459,151	1,255,863	36.6
	2	509,833	1,258,114	40.5
	3	495,776	1,215,552	40.8
	4	484,925	1,148,775	42.2
	5 (highest)	534,616	1,194,792	44.7
	Unknown	5,964	17,883	33.4
Total		**2,490,265**	**6,090,979**	**40.9**

(a) Total may not equal the sum of individual remoteness or socioeconomic areas due to rounding.

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Table A3.5: Participation rate (%) of people aged 50–74, by sex and age, Australia, 2008–2009 to 2020–2021

Sex	Age group (years)	2008–2009	2009–2010	2010–2011	2011–2012	2012–2013	2013–2014	2014–2015	2015–2016	2016–2017	2017–2018	2018–2019	2019–2020	2020–2021
Males	50–54	34.1	32.2	29.9	28.0	26.9	26.5	26.4	26.2	28.0	29.8	31.4	31.8	29.9
	55–59	38.3	36.8	34.4	32.3	32.6	33.9	34.1	33.0	33.1	34.8	36.1	36.5	34.0
	60–64	. .	. .	. .	. .	. .	40.6	40.2	40.1	40.6	41.0	42.0	44.3	40.4
	65–69	50.6	49.4	47.0	45.5	43.5	41.7	41.1	42.0	45.5	47.6	48.7	51.9	48.2
	70–74	. .	. .	. .	. .	. .	. .	51.8	51.8	51.8	52.2	53.0	55.8	51.5
	50–74	*39.8*	*37.9*	*35.7*	*34.1*	*33.4*	*34.7*	*36.5*	*39.0*	*39.4*	*40.3*	*41.3*	*41.9*	*38.9*
Females	50–54	40.8	37.4	34.7	32.6	31.2	30.8	30.7	30.0	31.7	34.0	35.5	35.4	33.3
	55–59	47.6	44.7	41.9	39.4	38.9	39.7	39.5	38.0	37.8	39.9	41.2	41.1	38.8
	60–64	. .	. .	. .	. .	. .	47.2	46.2	45.2	45.6	46.5	47.3	49.1	45.5
	65–69	57.6	55.4	52.9	51.4	49.2	46.8	45.8	46.4	49.3	51.6	53.0	55.9	52.5
	70–74	. .	. .	. .	. .	. .	. .	53.1	53.2	53.4	54.1	55.0	57.0	52.8
	50–74	*47.5*	*44.2*	*41.6*	*39.9*	*38.7*	*40.1*	*41.3*	*42.9*	*43.2*	*44.5*	*45.6*	*45.7*	*42.8*
Persons	50–54	37.4	34.8	32.3	30.3	29.0	28.6	28.5	28.1	29.8	31.9	33.5	33.6	31.6
	55–59	42.9	40.7	38.1	35.8	35.8	36.8	36.8	35.5	35.5	37.3	38.7	38.9	36.4
	60–64	. .	. .	. .	. .	. .	43.9	43.2	42.7	43.1	43.8	44.7	46.7	43.0
	65–69	54.1	52.3	49.9	48.4	46.3	44.2	43.5	44.2	47.4	49.6	50.9	53.9	50.3
	70–74	. .	. .	. .	. .	. .	. .	52.5	52.5	52.6	53.1	54.0	56.4	52.2
	50–74	**43.6**	**41.0**	**38.6**	**37.0**	**36.1**	**37.4**	**38.9**	**40.9**	**41.3**	**42.4**	**43.5**	**43.8**	**40.9**

Note: Data presented are for rolling 2-year participation periods.

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Screening

Table A3.6: iFOBT positivity rate of people aged 50–74, by sex and age, Australia, 2021

Sex	Age at screen (years)	Positive result (N)	Valid screening test (N)	Screening positivity (%)
Males	50–54	8,115	131,314	6.2
	55–59	5,588	87,925	6.4
	60–64	10,123	146,587	6.9
	65–69	7,793	100,108	7.8
	70–74	11,354	126,756	9.0
	50–74	*42,973*	*592,690*	*7.3*
Females	50–54	6,207	131,475	4.7
	55–59	4,402	97,458	4.5
	60–64	8,096	166,374	4.9
	65–69	6,239	112,027	5.6
	70–74	8,963	136,489	6.6
	50–74	*33,907*	*643,823*	*5.3*
Persons	50–54	14,322	262,789	5.4
	55–59	9,990	185,383	5.4
	60–64	18,219	312,961	5.8
	65–69	14,032	212,135	6.6
	70–74	20,317	263,245	7.7
	50–74	**76,880**	**1,236,513**	**6.2**

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Table A3.7: iFOBT positivity rate of people aged 50–74, by screening round, Australia, 2021

Screen round	Positive result (N)	Valid screening test (N)	Screening positivity (%)
First	20,584	267,436	7.7
Subsequent (≤2 years)	35,019	642,148	5.5
Subsequent (>2 years)	21,277	326,929	6.5
All rounds	**76,880**	**1,236,513**	**6.2**

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Table A3.8: iFOBT positivity rate of people aged 50–74, by state and territory, remoteness area, and socioeconomic area, Australia, 2021

Area		Positive result (N)	Valid screening test (N)	Screening positivity (%)
State and territory	NSW	24,603	387,627	6.3
	Vic	20,194	329,280	6.1
	Qld	14,273	227,972	6.3
	WA	7,967	133,259	6.0
	SA	6,212	99,178	6.3
	Tas	2,094	31,990	6.5
	ACT	1,181	21,031	5.6
	NT	356	6,174	5.8
Remoteness area[(a)]	Major cities	50,057	836,858	6.0
	Inner regional	17,717	269,703	6.6
	Outer regional	7,826	112,013	7.0
	Remote	847	11,693	7.2
	Very remote	295	4,086	7.2
	Unknown	138	2,159	6.4
Socioeconomic area[(a)]	1 (lowest)	16,755	226,724	7.4
	2	17,061	253,660	6.7
	3	15,373	246,709	6.2
	4	13,886	240,595	5.8
	5 (highest)	13,628	265,763	5.1
	Unknown	177	3,062	5.8
Total		**76,880**	**1,236,511**	**6.2**

(a) Total may not equal the sum of individual remoteness or socioeconomic areas due to rounding.

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Table A3.9: iFOBT positivity rate of people aged 50–74, by Indigenous status, preferred language spoken at home, and disability status, Australia, 2021

Population group		Positive result (N)	Valid screening test (N)	Screening positivity (%)
Indigenous status	Indigenous	1,564	18,480	8.5
	Non-Indigenous	71,363	1,172,914	6.1
	Not stated	3,953	45,119	8.8
Preferred language spoken at home	Language other than English	10,454	172,711	6.1
	English	66,426	1,063,802	6.2
Disability status	Severe or profound activity limitation	4,271	37,296	11.5
	No severe or profound activity limitation reported	67,782	1,136,174	6.0
	Not stated[(a)]	4,827	63,043	7.7
Total		**76,880**	**1,236,513**	**6.2**

(a) Includes participants who did not report their disability status, or whose disability status is unknown.

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Assessment

Table A3.10: Diagnostic assessment rate (colonoscopy) of people aged 50–74, by sex and age, Australia, 2021

Sex	Age at first positive screen (years)	Assessments (N)	Positive iFOBT result (N)	Diagnostic assessment rate (%)
Males	50–54	6,955	8,115	85.7
	55–59	4,708	5,588	84.3
	60–64	8,539	10,123	84.4
	65–69	6,615	7,793	84.9
	70–74	9,356	11,354	82.4
	50–74	*36,173*	*42,973*	*84.2*
Females	50–54	5,466	6,207	88.1
	55–59	3,901	4,402	88.6
	60–64	7,136	8,096	88.1
	65–69	5,448	6,239	87.3
	70–74	7,642	8,963	85.3
	50–74	*29,593*	*33,907*	*87.3*
Persons	50–54	12,421	14,322	86.7
	55–59	8,609	9,990	86.2
	60–64	15,675	18,219	86.0
	65–69	12,063	14,032	86.0
	70–74	16,998	20,317	83.7
	50–74	**65,766**	**76,880**	**85.5**

Notes

1. Calculation of the diagnostic assessment rate is based on the screening test date. In contrast, calculation of the PPVs and detection rates for both adenoma and carcinoma, and the hospital admission rate, is based on the diagnostic assessment date. Therefore, the number of assessment counts may differ across indicators.
2. This indicator relies on information being reported back to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function (PFUF) data are now used to supplement missing colonoscopy form data and MBS claims. See ‘Current reporting limitations’ on page 4 for more details.

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Table A3.11: Diagnostic assessments (colonoscopy) performed for people aged 50–74, by health-care provider, Australia, 2021

Health-care provider	Assessments (N)	Proportion of assessments (%)
Public	15,046	22.9
Private	36,881	56.1
Not stated	2,925	4.4
PFUF not stated	10,914	16.6
Total	**65,766**	**100.0**

Notes

1. This indicator relies on information being reported back to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function (PFUF) data are now used to supplement missing colonoscopy form data and MBS claims. See ‘Current reporting limitations’ on page 4 for more details.
2. ‘PFUF not stated’ records are those known to have occurred from PFUF data only, but did not indicate a health-care provider type.

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Table A3.12: Diagnostic assessment rate (colonoscopy) of people aged 50–74, by state and territory, remoteness area, and socioeconomic area, Australia, 2021

Area		Assessments (N)	Positive iFOBT result (N)	Diagnostic assessment rate (%)
State and territory	NSW	20,375	24,603	82.8
	Vic	17,409	20,194	86.2
	Qld	12,591	14,273	88.2
	WA	6,908	7,967	86.7
	SA	5,259	6,212	84.7
	Tas	1,866	2,094	89.1
	ACT	1,058	1,181	89.6
	NT	300	356	84.3
Remoteness area[(a)]	Major cities	42,701	50,057	85.3
	Inner regional	15,358	17,717	86.7
	Outer regional	6,643	7,826	84.9
	Remote	699	847	82.6
	Very remote	243	295	82.3
	Unknown	122	138	88.4
Socioeconomic area[(a)]	1 (lowest)	13,655	16,755	81.5
	2	14,399	17,061	84.4
	3	13,201	15,373	85.9
	4	12,146	13,886	87.5
	5 (highest)	12,213	13,628	89.6
	Unknown	152	177	85.9
Total		**65,766**	**76,880**	**85.5**

(a) Total may not equal the sum of individual remoteness or socioeconomic areas due to rounding.

Notes

1. Calculation of the diagnostic assessment rate is based on the screening test date. In contrast, calculation of the positive predictive values (PPVs) and detection rates for both adenoma and carcinoma, and the hospital admission rate, is based on the diagnostic assessment date. Therefore, the number of assessment counts may differ across indicators.
2. This indicator relies on information being reported back to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function (PFUF) data are now used to supplement missing colonoscopy form data and MBS claims. See ‘Current reporting limitations’ on page 4 for more details.

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Table A3.13: Diagnostic assessment rate (colonoscopy) of people aged 50–74, by Indigenous status, preferred language spoken at home, and disability status, Australia, 2021

Population group		Assessments (N)	Positive iFOBT result (N)	Diagnostic assessment rate (%)
Indigenous status	Indigenous	1,197	1,564	76.5
	Non-Indigenous	61,410	71,363	86.1
	Not stated	3,159	3,953	79.9
Preferred language spoken at home	Language other than English	8,433	10,454	80.7
	English	57,333	66,426	86.3
Disability status	Severe or profound activity limitation	2,918	4,271	68.3
	No severe or profound activity limitation reported	59,374	67,782	87.6
	Not stated[(a)]	3,474	4,827	72.0
Total		**65,766**	**76,880**	**85.5**

(a) Includes participants who did not report their disability status, or whose disability status is unknown.

Notes

1. Calculation of the diagnostic assessment rate is based on the screening test date. In contrast, calculation of the PPVs and detection rates for both adenoma and carcinoma, and the hospital admission rate, is based on the diagnostic assessment date. Therefore, the number of assessment counts may differ across indicators.
2. This indicator relies on information being reported back to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function (PFUF) data are now used to supplement missing colonoscopy form data and MBS claims. See ‘Current reporting limitations’ on page 4 for more details.

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Table A3.14: Diagnostic assessment rate (colonoscopy) of people aged 50–74, by sex and age, Australia, 2008–2021

Sex	Age at first positive screen (years)	Diagnostic assessment rate (%)													
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021[(a)]
Males	50–54	75.5	76.4	76.8	74.7	74.2	71.8	73.4	71.4	69.2	67.7	66.8	58.0	56.1	85.7
	55–59	77.6	75.4	77.4	77.1	74.2	74.0	71.8	71.0	69.0	65.6	66.8	57.8	55.2	84.3
	60–64	. .	. .	. .	. .	. .	74.5	72.8	70.5	68.8	66.4	65.6	58.1	56.0	84.4
	65–69	76.5	77.0	77.8	78.3	75.0	74.4	73.7	70.2	68.2	65.5	64.7	59.0	56.2	84.9
	70–74	. .	. .	. .	. .	. .	. .	. .	68.4	65.5	64.9	63.8	56.5	56.0	82.4
	50–74	*76.7*	*76.3*	*77.4*	*76.9*	*74.6*	*73.7*	*73.0*	*70.0*	*67.4*	*65.8*	*65.1*	*57.8*	*55.9*	*84.2*
Females	50–54	77.4	76.2	78.4	77.9	75.5	74.2	73.6	73.6	69.5	69.1	67.8	67.8	70.9	88.1
	55–59	79.2	79.8	77.6	77.5	75.8	74.9	73.1	72.6	70.7	69.2	68.6	68.3	70.6	88.6
	60–64	. .	. .	. .	. .	. .	75.9	74.1	72.8	70.3	67.4	65.8	68.9	69.6	88.1
	65–69	77.7	75.2	78.6	78.8	76.4	74.6	74.6	71.5	69.8	67.0	66.0	67.8	68.6	87.3
	70–74	. .	. .	. .	. .	. .	. .	. .	68.7	67.1	65.7	64.4	64.4	66.2	85.3
	50–74	*78.2*	*76.9*	*78.2*	*78.1*	*76.0*	*74.7*	*73.9*	*71.4*	*69.0*	*67.3*	*66.0*	*67.3*	*69.0*	*87.3*
Persons	50–54	76.4	76.3	77.6	76.3	74.8	73.1	73.5	72.5	69.4	68.4	67.3	62.5	63.1	86.7
	55–59	78.4	77.6	77.5	77.3	75.0	74.5	72.5	71.8	69.9	67.3	67.6	62.5	62.2	86.2
	60–64	. .	. .	. .	. .	. .	75.2	73.4	71.6	69.5	66.9	65.7	62.9	62.1	86.0
	65–69	77.0	76.2	78.2	78.5	75.7	74.5	74.1	70.8	69.0	66.2	65.2	62.8	61.7	86.0
	70–74	. .	. .	. .	. .	. .	. .	. .	68.5	66.2	65.3	64.0	59.9	60.4	83.7
	50–74	**77.4**	**76.6**	**77.8**	**77.5**	**75.3**	**74.2**	**73.4**	**70.6**	**68.2**	**66.5**	**65.5**	**62.0**	**61.8**	**85.5**

(a) PFUF data are used from 2021 onwards to supplement missing colonoscopy form data and MBS claims. Trend data prior to 2021 should not be compared with newer time periods

Notes

1. Calculation of the diagnostic assessment rate is based on the screening test date. In contrast, calculation of the PPVs and detection rates for both adenoma and carcinoma, and the hospital admission rate, is based on the diagnostic assessment date. Therefore, the number of assessment counts may differ across indicators.
2. This indicator relies on information being reported back to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. See ‘Current reporting limitations’ on page 4 for more details.

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Table A3.15: Time between positive screen and diagnostic assessment of people aged 50–74, by sex and age, Australia, 2021

Sex	Age group (years)	No diagnostic assessment		≤30 days		≤60 days		≤120 days		≤180 days		≤360 days		>360 days		All
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N
Males	50–54	1,160	14.3	1,271	15.7	3,589	44.2	5,844	72.0	6,514	80.3	6,917	85.2	38	0.5	8,115
	55–59	880	15.7	876	15.7	2,420	43.3	3,971	71.1	4,401	78.8	4,685	83.8	23	0.4	5,588
	60–64	1,584	15.6	1,556	15.4	4,387	43.3	7,168	70.8	7,972	78.8	8,487	83.8	52	0.5	10,123
	65–69	1,178	15.1	1,119	14.4	3,378	43.3	5,600	71.9	6,224	79.9	6,564	84.2	51	0.7	7,793
	70–74	1,998	17.6	1,592	14.0	4,855	42.8	7,930	69.8	8,802	77.5	9,310	82.0	46	0.4	11,354
	50–74	*6,800*	*15.8*	*6,414*	*14.9*	*18,629*	*43.4*	*30,513*	*71.0*	*33,913*	*78.9*	*35,963*	*83.7*	*210*	*0.5*	*42,973*
Females	50–54	741	11.9	1,020	16.4	2,859	46.1	4,643	74.8	5,114	82.4	5,424	87.4	42	0.7	6,207
	55–59	501	11.4	795	18.1	2,084	47.3	3,316	75.3	3,650	82.9	3,871	87.9	30	0.7	4,402
	60–64	960	11.9	1,331	16.4	3,771	46.6	6,060	74.9	6,722	83.0	7,079	87.4	57	0.7	8,096
	65–69	791	12.7	1,005	16.1	2,927	46.9	4,654	74.6	5,141	82.4	5,416	86.8	32	0.5	6,239
	70–74	1,321	14.7	1,425	15.9	4,051	45.2	6,595	73.6	7,235	80.7	7,600	84.8	42	0.5	8,963
	50–74	*4,314*	*12.7*	*5,576*	*16.4*	*15,692*	*46.3*	*25,268*	*74.5*	*27,862*	*82.2*	*29,390*	*86.7*	*203*	*0.6*	*33,907*
Persons	50–54	1,901	13.3	2,291	16.0	6,448	45.0	10,487	73.2	11,628	81.2	12,341	86.2	80	0.6	14,322
	55–59	1,381	13.8	1,671	16.7	4,504	45.1	7,287	72.9	8,051	80.6	8,556	85.6	53	0.5	9,990
	60–64	2,544	14.0	2,887	15.8	8,158	44.8	13,228	72.6	14,694	80.7	15,566	85.4	109	0.6	18,219
	65–69	1,969	14.0	2,124	15.1	6,305	44.9	10,254	73.1	11,365	81.0	11,980	85.4	83	0.6	14,032
	70–74	3,319	16.3	3,017	14.8	8,906	43.8	14,525	71.5	16,037	78.9	16,910	83.2	88	0.4	20,317
	50–74	**11,114**	**14.5**	**11,990**	**15.6**	**34,321**	**44.6**	**55,781**	**72.6**	**61,775**	**80.4**	**65,353**	**85.0**	**413**	**0.5**	**76,880**

Note: This indicator relies on information being reported back to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function (PFUF) data are now used to supplement missing colonoscopy form data and MBS claims. See ‘Current reporting limitations’ on page 4 for more details.

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Table A3.16: Time between positive screen and diagnostic assessment of people aged 50–74, by state and territory, remoteness area, and socioeconomic area, Australia, 2021

		No diagnostic assessment		≤30 days		≤60 days		≤120 days		≤180 days		≤360 days		>360 days		All
Area		**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**
State or territory	NSW	4,228	17.2	3,493	14.2	10,080	41.0	16,691	67.8	18,856	76.6	20,222	82.2	153	0.6	24,603
	Vic	2,785	13.8	4,045	20.0	10,048	49.8	15,168	75.1	16,557	82.0	17,326	85.8	83	0.4	20,194
	Qld	1,682	11.8	2,137	15.0	6,509	45.6	10,805	75.7	11,902	83.4	12,515	87.7	76	0.5	14,273
	WA	1,059	13.3	1,275	16.0	4,132	51.9	6,239	78.3	6,644	83.4	6,879	86.3	29	0.4	7,967
	SA	953	15.3	714	11.5	2,300	37.0	4,317	69.5	4,930	79.4	5,235	84.3	24	0.4	6,212
	Tas	228	10.9	198	9.5	715	34.1	1,467	70.1	1,625	77.6	1,826	87.2	40	1.9	2,094
	ACT	123	10.4	111	9.4	450	38.1	869	73.6	991	83.9	1,050	88.9	8	0.7	1,181
	NT	56	15.7	17	4.8	87	24.4	225	63.2	270	75.8	300	84.3	—	—	356
Remoteness area[(a)]	Major cities	7,384	14.7	9,123	18.2	23,305	46.4	36,377	72.4	40,211	80.1	42,562	84.7	277	0.6	50,223
	Inner regional	2,336	13.2	2,128	12.1	7,762	44.0	13,151	74.5	14,498	82.1	15,224	86.3	90	0.5	17,650
	Outer regional	1,194	15.2	664	8.5	2,895	36.9	5,502	70.1	6,180	78.8	6,607	84.2	43	0.5	7,844
	Remote	134	18.0	37	5.0	219	29.4	483	64.7	566	75.9	610	81.8	2	0.3	746
	Very remote	50	17.9	15	5.4	79	28.3	170	60.9	208	74.6	228	81.7	1	0.4	279
	Unknown	16	11.6	23	16.7	61	44.2	98	71.0	112	81.2	122	88.4	—	—	138
Socioeconomic area	1 (lowest)	3,100	18.5	1,624	9.7	5,785	34.5	10,916	65.2	12,535	74.8	13,548	80.9	107	0.6	16,755
	2	2,662	15.6	2,028	11.9	7,085	41.5	12,206	71.5	13,579	79.6	14,308	83.9	91	0.5	17,061
	3	2,172	14.1	2,276	14.8	6,879	44.7	11,179	72.7	12,390	80.6	13,117	85.3	84	0.5	15,373
	4	1,740	12.5	2,646	19.1	6,824	49.1	10,556	76.0	11,480	82.7	12,074	87.0	72	0.5	13,886
	5 (highest)	1,415	10.4	3,388	24.9	7,671	56.3	10,801	79.3	11,651	85.5	12,154	89.2	59	0.4	13,628
	Unknown	25	14.1	28	15.8	77	43.5	123	69.5	140	79.1	152	85.9	—	—	177
Total		**11,114**	**14.5**	**11,990**	**15.6**	**34,321**	**44.6**	**55,781**	**72.6**	**61,775**	**80.4**	**65,353**	**85.0**	**413**	**0.5**	**76,880**

(a) A participant's location may be divided across multiple remoteness areas proportionally. For PI 4, participants were assigned to their largest proportion remoteness area. See Appendix E for more information.

Note: This indicator relies on information being reported back to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function (PFUF) data are now used to supplement missing colonoscopy form data and MBS claims. See 'Current reporting limitations' on page 4.

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Table A3.17: Time between positive screen and diagnostic assessment of people aged 50–74, by Indigenous status, preferred language spoken at home, and disability status, Australia, 2021

	No diagnostic assessment		≤30 days		≤60 days		≤120 days		≤180 days		≤360 days		>360 days		All
Population group	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**
Indigenous status															
Indigenous	367	23.5	137	8.8	475	30.4	930	59.5	1,087	69.5	1,185	75.8	12	0.8	1,564
Non-Indigenous	9,953	13.9	11,333	15.9	32,338	45.3	52,301	73.3	57,782	81.0	61,045	85.5	365	0.5	71,363
Not stated	794	20.1	520	13.2	1,508	38.1	2,550	64.5	2,906	73.5	3,123	79.0	36	0.9	3,953
Preferred language spoken at home															
Language other than English	2,021	19.3	1,466	14.0	3,945	37.7	6,719	64.3	7,714	73.8	8,356	79.9	77	0.7	10,454
English	9,093	13.7	10,524	15.8	30,376	45.7	49,062	73.9	54,061	81.4	56,997	85.8	336	0.5	66,426
Disability status															
Severe or profound activity limitation	1,353	31.7	299	7.0	1,080	25.3	2,171	50.8	2,608	61.1	2,884	67.5	34	0.8	4,271
No severe or profound activity limitation reported	8,408	12.4	11,199	16.5	31,800	46.9	50,962	75.2	56,064	82.7	59,036	87.1	338	0.5	67,782
Not stated[(a)]	1,353	28.0	492	10.2	1,441	29.9	2,648	54.9	3,103	64.3	3,433	71.1	41	0.8	4,827
Total	**11,114**	**14.5**	**11,990**	**15.6**	**34,321**	**44.6**	**55,781**	**72.6**	**61,775**	**80.4**	**65,353**	**85.0**	**413**	**0.5**	**76,880**

(a) Includes participants who did not report their disability status, or whose disability status is unknown.

Note: This indicator relies on information being reported back to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function (PFUF) data are now used to supplement missing colonoscopy form data and MBS claims. See ‘Current reporting limitations’ on page 4 for more details.

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Table A3.18: Time between positive screen and diagnostic assessment of people aged 50–74, median and 90th percentile value (in days), by sex and age, Australia, 2021

Sex	Age at first positive screen (years)	Median	90th percentile
Males	50–54	59	148
	55–59	59	151
	60–64	59	154
	65–69	59	147
	70–74	58	149
	50–74	59	150
Females	50–54	58	147
	55–59	57	148
	60–64	57	146
	65–69	57	142
	70–74	57	140
	50–74	57	145
Persons	50–54	58	148
	55–59	58	149
	60–64	58	149
	65–69	58	145
	70–74	58	146
	50–74	**58**	**147**

Note: This indicator relies on information being reported back to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function (PFUF) data are now used to supplement missing colonoscopy form data and MBS claims. See ‘Current reporting limitations’ on page 4 for more details.

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Table A3.19: Time between positive screen and diagnostic assessment of people aged 50–74, median and 90th percentile value (in days), by health-care provider, Australia, 2021

Health-care provider	Median	90th percentile
Public	83	182
Private	47	123
Not stated	61	147
PFUF not stated	64	148
Total	**58**	**147**

Notes

1. This indicator relies on information being reported back to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function (PFUF) data are now used to supplement missing colonoscopy form data and MBS claims. See ‘Current reporting limitations’ on page 4 for more details.
2. ‘PFUF not stated’ records are those known to have occurred from PFUF data only, but did not indicate a health-care provider type.

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Table A3.20: Time between positive screen and diagnostic assessment of people aged 50–74, median and 90th percentile value (in days), by state and territory, remoteness area, and socioeconomic area, Australia, 2021

Area		Median	90th percentile
State and territory	NSW	61	162
	Vic	52	136
	Qld	58	141
	WA	52	119
	SA	67	154
	Tas	73	235
	ACT	67	151
	NT	84	178
Remoteness area[(a)]	Major cities	56	147
	Inner regional	60	141
	Outer regional	66	156
	Remote	71	163
	Very remote	78	178
	Unknown	61	165
Socioeconomic area	1 (lowest)	69	167
	2	61	146
	3	58	147
	4	54	138
	5 (highest)	48	130
	Unknown	60	147
Total		**58**	**147**

(a) A participant's location may be divided across multiple remoteness areas proportionally. For PI 4, participants were assigned to their largest proportion remoteness area. See Appendix E for more information.

Note: This indicator relies on information being reported back to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function (PFUF) data are now used to supplement missing colonoscopy form data and MBS claims. See 'Current reporting limitations' on page 4 for more details.

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Table A3.21: Time between positive screen and diagnostic assessment of people aged 50–74, median and 90th percentile value (in days), by Indigenous status, preferred language spoken at home, and disability status, Australia, 2021

Population group		Median	90th percentile
Indigenous status	Indigenous	72	177
	Non-Indigenous	57	146
	Not stated	63	165
Preferred language spoken at home	Language other than English	64	169
	English	57	143
Disability status	Severe or profound activity limitation	76	184
	No severe or profound activity limitation reported	57	143
	Not stated[(a)]	70	188
Total		**58**	**147**

(a) Includes participants who did not report their disability status, or whose disability status is unknown.

Note: This indicator relies on information being reported back to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function (PFUF) data are now used to supplement missing colonoscopy form data and MBS claims. See ‘Current reporting limitations’ on page 4 for more details.

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Table A3.22: Time between positive screen and diagnostic assessment of people aged 50–74, median (in days), by sex and age, Australia, 2008–2021

Sex	Age at first positive screen (years)	Median days													
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021[(a)]
Males	50–54	58	63	62	58	58	59	60	57	55	55	53	50	49	59
	55–59	55	58	60	57	57	56	56	56	57	55	54	49	48	59
	60–64	. .	. .	. .	. .	. .	58	56	55	56	53	52	49	49	59
	65–69	52	59	56	55	52	51	55	53	55	53	51	49	49	59
	70–74	. .	. .	. .	. .	. .	. .	. .	54	53	53	51	48	50	58
	50–74	*54*	*60*	*58*	*56*	*55*	*55*	*56*	*55*	*55*	*53*	*52*	*49*	*49*	*59*
Females	50–54	53	60	60	59	56	55	55	55	55	51	52	50	49	58
	55–59	55	57	56	54	54	54	56	53	52	53	49	51	49	57
	60–64	. .	. .	. .	. .	. .	57	52	52	53	51	50	50	50	57
	65–69	51	54	54	51	52	48	52	51	53	50	49	49	50	57
	70–74	. .	. .	. .	. .	. .	. .	. .	51	53	51	50	50	50	57
	50–74	*53*	*56*	*57*	*54*	*54*	*52*	*53*	*52*	*53*	*51*	*50*	*50*	*49*	*57*
Persons	50–54	56	61	61	58	57	57	56	56	55	53	52	50	49	58
	55–59	55	57	58	56	56	55	56	55	55	54	53	50	48	58
	60–64	. .	. .	. .	. .	. .	58	54	53	55	52	51	50	49	58
	65–69	51	56	55	53	52	50	54	53	54	51	50	49	49	58
	70–74	. .	. .	. .	. .	. .	. .	. .	53	53	52	50	49	50	58
	50–74	**53**	**58**	**57**	**55**	**55**	**53**	**55**	**53**	**54**	**52**	**51**	**49**	**49**	**58**

(a) PFUF data are used from 2021 onwards to supplement missing colonoscopy form data and MBS claims. Trend data prior to 2021 should not be compared with newer time periods.

Note: This indicator relies on information being reported back to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. See 'Current reporting limitations' on page 4 for more details.

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Diagnosis

Diagnosis data were not considered complete enough to allow formal performance indicator reporting of NBCSP diagnostic outcomes. Therefore, data for the diagnostic performance indicators are not available.

See Chapter 4 for a summary of bowel abnormality detection results, using available assessment and diagnosis data.

Outcomes

Table A3.23: Hospital admissions within 30 days of assessment of people aged 50–74, by sex and age, Australia, 2021

Sex	Age group at assessment (years)	Hospital admissions (N)	Assessments (N)	Hospital admission rate (per 10,000 assessments)
Males	50–54	—	7,226	—
	55–59	—	5,238	—
	60–64	—	9,428	—
	65–69	—	8,062	—
	70–74	1	11,153	n.p.
	50–74	*1*	*41,107*	*n.p.*
Females	50–54	1	5,680	n.p.
	55–59	—	4,484	—
	60–64	—	8,248	—
	65–69	—	6,974	—
	70–74	—	9,133	—
	50–74	*1*	*34,519*	—
Persons	50–54	1	12,906	—
	55–59	—	9,722	—
	60–64	—	17,676	n.p.
	65–69	—	15,036	—
	70–74	1	20,286	n.p.
	50–74	**2**	**75,626**	**0.3**

Notes

1. The hospital admission rate is calculated based on the diagnostic assessment date. This is the same as the PPV rate for adenoma and the PPV rate for carcinoma. This differs from the diagnostic assessment rate, which is calculated based on the screening test date. Therefore, assessment counts may differ across indicators.
2. This indicator relies on information being reported back to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. However, Participant follow-up function (PFUF) data are now used to supplement missing colonoscopy form data. See ‘Current reporting limitations’ on page 4 for more details.

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Table A3.24: Incidence of bowel cancer, by sex and age group, Australia, 2023

	Male		Female		Persons	
Age group (years)	**Number**	**Rate**	**Number**	**Rate**	**Number**	**Rate**
0–4	—	—	1	n.p.	1	n.p.
5–9	2	n.p.	2	n.p.	4	n.p.
10–14	11	1.3	18	2.2	29	1.7
15–19	27	3.2	39	4.9	66	4.1
20–24	33	3.6	45	5.1	78	4.3
25–29	52	5.1	64	6.4	116	5.7
30–34	138	13.6	141	13.7	279	13.7
35–39	164	17.0	187	18.8	351	17.9
40–44	204	23.1	232	25.9	436	24.5
45–49	294	36.7	264	32.4	558	34.5
50–54	575	70.6	456	53.4	1,031	61.8
55–59	541	73.4	386	49.8	927	61.3
60–64	963	131.5	633	81.9	1,596	106.0
65–69	975	153.2	679	99.2	1,654	125.2
70–74	1,210	219.6	938	158.5	2,148	187.9
75–79	1,085	244.8	1,000	209.0	2,085	226.2
80–84	1,019	380.1	976	309.4	1,995	341.9
85+	840	379.0	1,173	349.1	2,013	361.0
Ages 50–74 crude rate	*4,264*	*122.9*	*3,092*	*84.0*	*7,356*	*102.9*
Ages 50–74 ASR	*4,264*	*116.5*	*3,092*	*79.9*	*7,356*	*97.7*
All ages crude rate	**8,133**	**60.4**	**7,234**	**52.8**	**15,367**	**56.6**
All ages ASR	**8,133**	**52.5**	**7,234**	**42.0**	**15,367**	**47.0**

Notes

1. The 2023 estimates are based on 2010–2019 incidence data. See Appendix D for further information.
2. Age-specific rates are expressed per 100,000 people. The age-standardised rates (ASRs) for ages 50–74 and all ages were age standardised to the Australian population as at 30 June 2001 and expressed per 100,000 people.
3. The number of people in each age group may not sum to total due to rounding.

Source: AIHW ACD 2019.

Table A3.25: Incidence of bowel cancer, by state and territory, remoteness area, and socioeconomic area, people aged 50–74 years, Australia, 2015–2019

Area		Number	ASR	Crude rate
State and territory	NSW	13,137	119.2	125.2
	Vic	9,855	116.9	121.4
	Qld	8,468	123.1	128.4
	WA	3,585	104.5	107.0
	SA	3,093	115.8	123.0
	Tas	1,088	120.7	129.8
	ACT	515	104.0	105.6
	NT	295	119.5	111.8
Remoteness area	Major cities	25,432	113.2	116.6
	Inner regional	9,351	124.8	134.8
	Outer regional	4,434	127.9	135.4
	Remote	544	127.1	127.8
	Very remote	209	103.5	95.7
	Unknown	75	. .	. .
Socioeconomic area	1 (lowest)	8,995	129.9	138.7
	2	9,074	125.9	133.8
	3	8,255	119.2	124.2
	4	7,033	109.5	111.8
	5 (highest)	6,600	100.1	102.2
	Unknown	88	. .	. .
Total		**40,045**	**117.5**	**122.6**

Notes

1. 'State or territory' refers to the state or territory of usual residence.
2. Remoteness was classified according to the Australian Statistical Geography Standard (ASGS) Remoteness Areas (see Appendix E).
3. Socioeconomic areas were classified using the Australian Bureau of Statistics (ABS) Index of Relative Socio-economic Disadvantage (IRSD) (see Appendix E).
4. ASRs are standardised to the Australian population as at 30 June 2001 and expressed per 100,000 people.
5. The number of people in different remoteness or socioeconomic areas may not sum to total due to rounding.

Source: AIHW ACD 2019.

Table A3.26: Incidence of bowel cancer, by Indigenous status, NSW, Vic, Qld, WA, ACT and NT, 50–74 years, 2015–2019

Indigenous status	Number	ASR	Crude rate
Indigenous	595	123.7	110.0
Non-Indigenous	34,029	113.7	118.5
Not stated	1,231	. .	. .
Total	**35,855**	**117.6**	**122.3**

Note: The rates were age standardised to the Australian population as at 30 June 2001 and expressed per 100,000 people.

Source: AIHW ACD 2019.

Table A3.27: Incidence of bowel cancer, by sex, people aged 50–74, Australia, 1984–2023

	Males		Females		Persons	
Year	Number	ASR	Number	ASR	Number	ASR
1984	2,608	166.3	2,057	119.2	4,665	141.5
1985	2,806	176.0	2,190	126.5	4,996	149.8
1986	2,773	169.9	2,171	123.2	4,944	145.2
1987	2,871	173.7	2,218	123.5	5,089	147.3
1988	2,917	173.0	2,157	117.8	5,074	144.2
1989	3,111	181.4	2,254	122.5	5,365	150.5
1990	3,101	178.1	2,304	123.7	5,405	149.8
1991	3,426	192.9	2,421	127.1	5,847	158.8
1992	3,336	183.9	2,536	132.1	5,872	157.0
1993	3,474	188.0	2,502	128.2	5,976	157.0
1994	3,641	192.3	2,634	132.5	6,275	161.3
1995	3,720	193.5	2,571	127.0	6,291	159.3
1996	3,913	201.0	2,619	127.8	6,532	163.3
1997	3,938	197.2	2,605	124.8	6,543	160.1
1998	3,883	190.3	2,710	127.7	6,593	158.2
1999	3,925	188.2	2,719	125.7	6,644	156.3
2000	4,217	198.0	2,798	127.3	7,015	162.0
2001	4,174	191.7	2,847	127.0	7,021	158.8
2002	4,208	189.0	2,797	122.4	7,005	155.2
2003	4,185	184.5	2,870	123.4	7,055	153.5
2004	4,338	187.5	2,879	121.5	7,217	154.0
2005	4,292	181.1	2,848	117.3	7,140	148.8
2006	4,427	183.1	3,036	122.0	7,464	152.1
2007	4,759	189.7	3,300	128.4	8,059	158.7
2008	4,795	185.2	3,230	122.1	8,025	153.2
2009	4,541	170.1	3,084	113.2	7,625	141.3
2010	4,924	177.7	3,291	116.7	8,215	146.9
2011	4,715	165.5	3,297	114.0	8,012	139.5
2012	4,604	156.2	3,211	106.5	7,815	131.1
2013	4,458	146.4	3,143	101.5	7,601	123.7
2014	4,612	147.6	3,170	99.3	7,782	123.1
2015	4,714	147.9	3,300	100.8	8,014	124.0
2016	4,708	144.3	3,309	98.5	8,017	121.0
2017	4,641	138.7	3,331	96.2	7,972	117.1
2018	4,690	136.9	3,251	91.4	7,941	113.7
2019	4,754	136.1	3,347	92.1	8,101	113.6
2020	4,568	127.4	3,271	87.1	7,839	106.7
2021	4,493	123.4	3,227	84.4	7,720	103.4
2022	4,365	119.3	3,146	81.7	7,511	99.9
2023	4,264	116.5	3,092	79.9	7,356	97.7

Notes

1. The 2020–2023 estimates are based on 2010–2019 incidence data. See Appendix D for further information.
2. ASRs are standardised to the Australian population as at 30 June 2001 and expressed per 100,000 people.
3. Values prior to 1984 are presented in our online data table, available on the AIHW website.

Source: AIHW ACD 2019.

Table A3.28: Mortality from bowel cancer, by sex and age, Australia, 2023

	Males		Females		Persons	
Age group (years)	**Number**	**Rate**	**Number**	**Rate**	**Number**	**Rate**
0–4	—	—	—	—	—	—
5–9	—	—	—	—	—	—
10–14	—	—	—	—	—	—
15–19	—	—	—	—	—	—
20–24	1	n.p.	1	n.p.	2	n.p.
25–29	4	n.p.	4	n.p.	8	0.4
30–34	21	2.1	11	1.1	32	1.6
35–39	36	3.7	37	3.7	73	3.7
40–44	37	4.2	43	4.8	80	4.5
45–49	65	8.1	51	6.3	116	7.2
50–54	114	14.0	77	9.0	191	11.5
55–59	165	22.4	105	13.5	270	17.9
60–64	220	30.1	125	16.2	345	22.9
65–69	282	44.3	191	27.9	473	35.8
70–74	324	58.8	261	44.1	585	51.2
75–79	375	84.6	303	63.3	678	73.6
80–84	451	168.2	367	116.4	818	140.2
85+	715	322.6	921	274.1	1,636	293.4
Ages 50–74 crude rate	*1,105*	*31.8*	*759*	*20.6*	*1,864*	*26.1*
Ages 50–74 ASR	*1,105*	*29.9*	*759*	*19.3*	*1,864*	*24.5*
All ages crude rate	**2,810**	**20.9**	**2,497**	**18.2**	**5,307**	**19.5**
All ages ASR	**2,810**	**17.8**	**2,497**	**13.0**	**5,307**	**15.3**

Notes

1. The 2023 estimates are based on 2012–2021 mortality data. See Appendix D for further information.
2. Age-specific rates are expressed per 100,000 people. The ASRs for ages 50–74 and all ages were age standardised to the Australian population as at 30 June 2001 and expressed per 100,000 people.
3. The number of people in each age group may not sum to total due to rounding.

Source: AIHW National Mortality Database (NMD).

Table A3.29: Mortality from bowel cancer, by state and territory, remoteness area, and socioeconomic group, 50–74 years, Australia, 2017–2021

Area		Number	ASR	Crude rate
State or territory	NSW	3,324	28.7	30.8
	Vic	2,493	27.9	29.5
	Qld	2,179	29.6	31.5
	WA	892	24.0	25.2
	SA	821	29.4	31.6
	Tas	270	28.7	31.1
	ACT	114	21.5	22.4
	NT	90	34.8	33.1
Remoteness area	Major cities	6,070	25.4	26.6
	Inner regional	2,488	31.1	34.7
	Outer regional	1,197	33.5	36.4
	Remote	118	27.1	28.3
	Very remote	50	23.9	21.4
	Unknown	261	. .	. .
Socioeconomic group	1 (lowest)	2,490	33.5	36.3
	2	2,382	30.8	33.6
	3	1,889	26.3	27.9
	4	1,616	24.2	25.0
	5 (highest)	1,543	21.8	22.7
	Unknown	263	. .	. .
Total		**10,183**	**28.2**	**30.0**

Notes

1. ‘State or territory’ refers to the state or territory of usual residence.
2. Remoteness was classified according to the ASGS Remoteness Areas (see Appendix E).
3. Socioeconomic areas were classified using the ABS IRSD (see Appendix E).
4. ASRs are standardised to the Australian population as at 30 June 2001 and expressed per 100,000 people.
5. Deaths registered in 2018 and earlier are based on the final version of cause of death data; deaths registered in 2019 are based on the revised version; and deaths registered in 2020–2021 are based on preliminary versions. Revised and preliminary versions are subject to further revision by the ABS.
6. The number of people in different remoteness or socioeconomic areas may not sum to total due to rounding.

Source: AIHW NMD.

Table A3.30: Mortality from bowel cancer, by Indigenous status, NSW, Qld, WA, SA, and NT, people aged 50–74, 2017–2021

Indigenous status	Number	ASR	Crude rate
Indigenous	190	37.4	33.4
Non-Indigenous	7,082	28.1	30.1
Not stated[(a)]	34	. .	. .
Total	**7,306**	**28.4**	**30.3**

(a) Deaths where Indigenous status was not stated were included in the total count and ASR calculation.

Notes

1. ASRs are standardised to the Australian population as at 30 June 2001 and expressed per 100,000 people.
2. Deaths registered in 2018 and earlier are based on the final version of cause of death data; deaths registered in 2019 are based on the revised version; and deaths registered in 2020–2021 are based on preliminary versions. Revised and preliminary versions are subject to further revision by the ABS.

Source: AIHW NMD.

Table A3.31: Mortality from bowel cancer for people aged 50–74, by sex, Australia, 1986–2023

	Males		Females		Persons	
Year	Number	ASR	Number	ASR	Number	ASR
1986	1,317	80.3	1,008	56.3	2,325	67.5
1987	1,361	82.0	1,028	57.1	2,389	68.9
1988	1,380	81.8	995	54.4	2,375	67.5
1989	1,370	79.7	985	53.0	2,355	65.7
1990	1,353	77.1	1,008	53.8	2,361	64.8
1991	1,369	77.1	944	48.9	2,313	62.4
1992	1,415	78.2	960	49.5	2,375	63.4
1993	1,390	74.8	996	50.4	2,386	62.2
1994	1,569	82.8	1,054	52.2	2,623	67.0
1995	1,475	76.6	992	48.6	2,467	62.0
1996	1,570	80.1	979	47.5	2,549	63.2
1997	1,534	76.8	1,029	49.1	2,563	62.5
1998	1,454	71.3	992	46.4	2,446	58.5
1999	1,528	73.4	904	41.7	2,432	57.1
2000	1,483	69.7	921	41.8	2,404	55.4
2001	1,447	66.6	920	41.0	2,367	53.5
2002	1,348	60.7	921	40.3	2,269	50.3
2003	1,418	62.7	883	38.0	2,301	50.2
2004	1,327	57.7	859	36.3	2,186	46.8
2005	1,394	59.4	822	34.1	2,216	46.5
2006	1,350	55.9	805	32.7	2,155	44.1
2007	1,345	54.0	846	33.0	2,191	43.4
2008	1,329	51.8	904	34.3	2,233	42.9
2009	1,362	51.0	871	32.2	2,233	41.5
2010	1,328	48.4	816	29.2	2,144	38.7
2011	1,288	45.1	772	26.6	2,060	35.7
2012	1,289	43.9	813	27.2	2,102	35.4
2013	1,323	43.8	804	25.8	2,127	34.7
2014	1,282	41.0	803	25.0	2,085	32.9
2015	1,267	39.6	822	25.1	2,089	32.2
2016	1,232	37.5	821	24.3	2,053	30.8
2017	1,230	36.5	809	23.3	2,039	29.8
2018	1,279	36.9	823	23.2	2,102	29.9
2019	1,199	33.9	757	20.5	1,956	27.0
2020	1,258	34.8	896	23.4	2,154	28.9
2021	1,179	32.1	753	19.4	1,932	25.6
2022	1,139	30.9	775	19.8	1,914	25.2
2023	1,105	29.9	759	19.3	1,864	24.5

Notes

1. The 2022–2023 estimates are based on 2012–2021 mortality data. See Appendix D for further information.
2. ASRs are standardised to the Australian population as at 30 June 2001 and expressed per 100,000 people.
3. Deaths registered in 2018 and earlier are based on the final version of cause of death data; deaths registered in 2019 are based on the revised version; and deaths registered in 2020–2021 are based on preliminary versions. Revised and preliminary versions are subject to further revision by the ABS.
4. Values prior to 1986 are presented in our online data table, available on the AIHW website.

Source: AIHW NMD.

Additional tables for Chapter 4

Table A4.1: Available diagnostic assessment outcomes of people aged 50–74, by age group and sex, Australia, assessed in 2021

Sex	Age group at assessment (years)		Assessments with outcome data[a]	Available assessment results						
				No issue noted[a]	Biopsy awaiting histopathology[b]	Other histopathology diagnosis[c]	Confirmed non-advanced adenoma[d]	Confirmed advanced adenoma[d]	Suspected cancer[e]	Confirmed cancer[f]
Males	50–54	N	1,687	685	644	44	128	135	46	5
		%		40.6	38.2	2.6	7.6	8.0	2.7	0.3
	55–59	N	1,258	462	522	36	99	104	30	5
		%		36.7	41.5	2.9	7.9	8.3	2.4	0.4
	60–64	N	2,166	791	880	47	191	167	80	10
		%		36.5	40.6	2.2	8.8	7.7	3.7	0.5
	65–69	N	1,748	610	725	40	137	148	76	12
		%		34.9	41.5	2.3	7.8	8.5	4.3	0.7
	70–74	N	2,267	791	983	42	159	184	90	18
		%		34.9	43.4	1.9	7.0	8.1	4.0	0.8
	50–74	N	*9,126*	*3,339*	*3,754*	*209*	*714*	*738*	*322*	*50*
		%		*36.6*	*41.1*	*2.3*	*7.8*	*8.1*	*3.5*	*0.5*
Females	50–54	N	1,212	626	364	32	65	96	25	4
		%		51.7	30.0	2.6	5.4	7.9	2.1	0.3
	55–59	N	919	433	321	22	59	38	42	4
		%		47.1	34.9	2.4	6.4	4.1	4.6	0.4
	60–64	N	1,573	693	573	47	107	106	41	6
		%		44.1	36.4	3.0	6.8	6.7	2.6	0.4
	65–69	N	1,264	580	419	34	87	99	38	7
		%		45.9	33.1	2.7	6.9	7.8	3.0	0.6
	70–74	N	1,633	722	589	34	119	104	53	12
		%		44.2	36.1	2.1	7.3	6.4	3.2	0.7
	50–74	N	*6,601*	*3,054*	*2,266*	*169*	*437*	*443*	*199*	*33*
		%		*46.3*	*34.3*	*2.6*	*6.6*	*6.7*	*3.0*	*0.5*

(continued)

Table A4.1 (continued): Available diagnostic assessment outcomes of people aged 50–74, by age group and sex, Australia, assessed in 2021

Sex	Age group at assessment (years)		Assessments with outcome data[a]	Available assessment results						
				No issue noted[a]	Biopsy awaiting histopathology[b]	Other histopathology diagnosis[c]	Confirmed non-advanced adenoma[d]	Confirmed advanced adenoma[d]	Suspected cancer[e]	Confirmed cancer[f]
Persons	50–54	N	2,899	1,311	1,008	76	193	231	71	9
		%		45.2	34.8	2.6	6.7	8.0	2.4	0.3
	55–59	N	2,177	895	843	58	158	142	72	9
		%		41.1	38.7	2.7	7.3	6.5	3.3	0.4
	60–64	N	3,739	1,484	1,453	94	298	273	121	16
		%		39.7	38.9	2.5	8.0	7.3	3.2	0.4
	65–69	N	3,012	1,190	1,144	74	224	247	114	19
		%		39.5	38.0	2.5	7.4	8.2	3.8	0.6
	70–74	N	3,900	1,513	1,572	76	278	288	143	30
		%		38.8	40.3	1.9	7.1	7.4	3.7	0.8
	50–74	**N**	**15,727**	**6,393**	**6,020**	**378**	**1,151**	**1,181**	**521**	**83**
		%		**40.6**	**38.3**	**2.4**	**7.3**	**7.5**	**3.3**	**0.5**

(a) Excludes 59,899 colonoscopies with no record of outcome, such as those reported by Medicare claim (38,086), or by PFUF only (21,813). 'No issue noted' recorded when no cancers, adenomas, polyps or other diagnoses were noted at colonoscopy and/or histopathology.

(b) Polyps detected at assessment and sent to histopathology for analysis. No histopathology report form received by Register.

(c) A non-cancer, non-adenoma diagnosis was recorded at colonoscopy, for example, hyperplastic polyps.

(d) Confirmed adenoma figures are based on a combination of the assessment and histopathology report forms for a person received by the NCSR.

(e) Cancer suspected at assessment but not yet confirmed by histopathology.

(f) Cancer confirmed by histopathology.

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Table A4.2: Available assessment outcomes of people aged 50–74, by state and territory, Australia, assessed in 2021

State and territory		Assessments with outcome data[a]	Available assessment results						
			No issue noted[a]	Biopsy awaiting histopathology[b]	Other histopathology diagnosis[c]	Confirmed non-advanced adenoma[d]	Confirmed advanced adenoma[d]	Suspected cancer[e]	Confirmed cancer[f]
NSW	N	2,774	1,262	931	64	205	179	114	19
	%		45.5	33.6	2.3	7.4	6.5	4.1	0.7
Vic	N	3,848	1,708	1,586	63	171	184	132	4
	%		44.4	41.2	1.6	4.4	4.8	3.4	0.1
Qld	N	5,313	1,963	2,073	129	470	477	165	36
	%		36.9	39.0	2.4	8.8	9.0	3.1	0.7
WA	N	1,421	496	787	11	30	34	56	7
	%		34.9	55.4	0.8	2.1	2.4	3.9	0.5
SA	N	1,154	510	451	21	40	91	40	1
	%		44.2	39.1	1.8	3.5	7.9	3.5	0.1
Tas	N	712	311	86	57	123	119	7	9
	%		43.7	12.1	8.0	17.3	16.7	1.0	1.3
ACT	N	478	134	90	32	112	97	6	7
	%		28.0	18.8	6.7	23.4	20.3	1.3	1.5
NT	N	27	9	16	1	—	—	1	—
	%		33.3	59.3	3.7	—	—	3.7	—
Australia	**N**	**15,727**	**6,393**	**6,020**	**378**	**1,151**	**1,181**	**521**	**83**
	%		**40.6**	**38.3**	**2.4**	**7.3**	**7.5**	**3.3**	**0.5**

(a) Excludes 59,899 colonoscopies with no record of outcome, such as those reported by Medicare claim (38,086), or by PFUF only (21,813). 'No issue noted' recorded when no cancers, adenomas, polyps or other diagnoses were noted at colonoscopy and/or histopathology.

(b) Polyps detected at assessment and sent to histopathology for analysis. No histopathology report form received by Register.

(c) A non-cancer, non-adenoma diagnosis was recorded at colonoscopy, for example, hyperplastic polyps.

(d) Confirmed adenoma figures are based on a combination of the assessment and histopathology report forms for a person received by the NCSR.

(e) Cancer suspected at assessment but not yet confirmed by histopathology.

(f) Cancer confirmed by histopathology.

Note: Differences in form return and varying pathway practices for diagnostic assessment may affect results across jurisdictions.

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Additional tables for Chapter 5

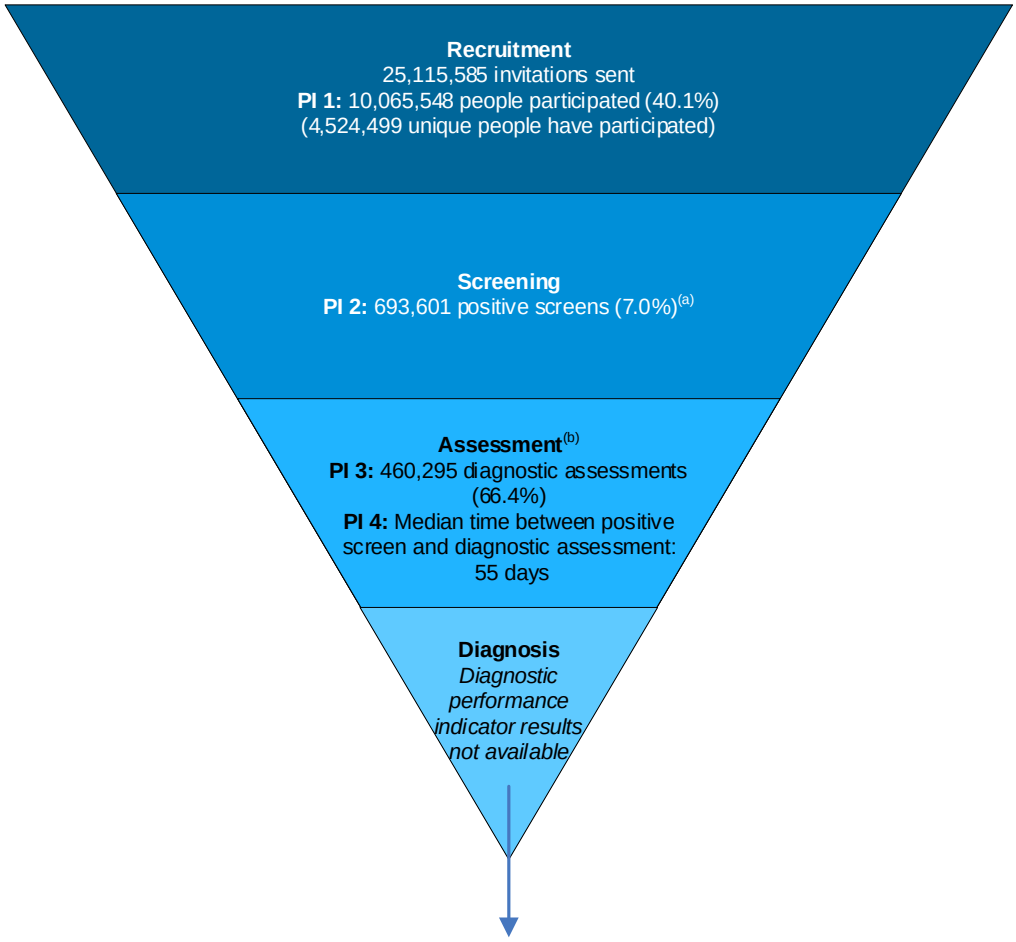
Table A5.1: Estimated participation rate for people aged 50–74, by preferred language spoken at home, sex and age group, Australia, 2020–2021

Sex	Age group (years)	Estimated participation rate range (%)		Total participation rate (%)
		Language other than English	English	
Males	50–54	14.0–18.4	32.7–35.3	29.9
	55–59	20.9–27.5	35.5–38.2	34.0
	60–64	27.7–36.6	41.2–44.0	40.4
	65–69	33.0–43.9	49.0–52.2	48.2
	70–74	33.4–45.3	52.5–56.0	51.5
	50–74	*23.5–31.2*	*40.5–43.4*	*38.9*
Females	50–54	15.0–18.2	37.3–39.5	33.3
	55–59	25.4–31.2	40.7–43.1	38.8
	60–64	32.9–40.6	46.6–49.2	45.5
	65–69	36.4–45.5	54.0–57.2	52.5
	70–74	34.1–44.3	54.5–57.8	52.8
	50–74	*26.6–32.9*	*45.1–47.8*	*42.8*
Persons	50–54	14.5–18.3	35.0–37.4	31.6
	55–59	23.2–29.4	38.1–40.6	36.4
	60–64	30.3–38.7	43.9–46.6	43.0
	65–69	34.7–44.7	51.5–54.7	50.3
	70–74	33.7–44.7	53.5–56.9	52.2
	50–74	**25.1–32.1**	**42.8–45.6**	**40.9**

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023) using 2021 Census data (see Appendix F for more information).

Appendix B: Overall NBCSP outcomes

Figure B1: Summary of NBCSP performance indicators, Australia, August 2006 to June 2022



***Assessment details*[c]**

No issue, or other diagnosis	129,725	(41.4%)
Polyp awaiting histopathology	102,959	(32.8%)
Non-advanced adenomas	28,915	(9.2%)
Advanced adenomas	29,381	(9.4%)
Suspected cancer	10,067	(3.2%)
Confirmed cancer	2,583	(0.8%)

(a) Based on the 9,892,660 participants who returned a valid iFOBT.

(b) Information on colonoscopies known through MBS claim only prior to 2018 is not included; PI 3 and PI 4 may be under-reported. Count also includes colonoscopies from 2021 onwards that were notified through PFUF data.

(c) Based on available outcome data. Excludes 146,571 assessments with no record of outcome.

Notes

1. PI 1: 'people participated' counts the people who participated over the time the NBCSP has been operating. It is not a unique count of people, and people who participated multiple times over several years were counted more than once. 'Unique people participated' counts each unique person who has participated in the program at least once.
2. Assessment and diagnosis (PIs 3–9) rely on information being reported back to the NCSR. As return of NBCSP forms is not mandatory, there may be incomplete form return and incomplete data. See 'Current reporting limitations' on page 4 for more details.
3. PI 5a (adenoma detection rate), PI 5b (PPV of diagnostic assessment for detecting adenoma), PI 6a (colorectal cancer detection rate), PI 6b (PPV of diagnostic assessment for detecting colorectal cancer), PI 7 (interval cancer rate) and PI 8 (cancer clinico-pathological stage distribution) are not reported due to data incompleteness or unavailability. See 'Current reporting limitations' on page 4 for more details.

Source: AIHW analysis of NCSR as at 31 December 2022 (NCSR RDE 14/01/2023).

Appendix C: National Bowel Cancer Screening Program information

Target population

The target population list is compiled from those registered as an Australian citizen or permanent migrant in the Medicare enrolment file or registered with a Department of Veterans' Affairs gold card.

From 2020, roll-out of biennial screening for all eligible Australians in the target age group (50–74) was completed; eligible Australians will be sent an iFOBT screening kit and invited to screen at the time of their 50th birthday, then every 2 years after they have completed their last test, until the age of 74. Table C1 outlines the starting dates of each phase and the target age groups.

Table C1: NBCSP phases and target populations

Phase	Start date	End date	Target ages (years)
1	7 August 2006	30 June 2008	55 and 65
2	1 July 2008	30 June 2011(a)	50, 55 and 65
2(b)	1 July 2011	30 June 2013	50, 55 and 65
3	1 July 2013	31 December 2014	50, 55, 60 and 65
4	1 January 2015	31 December 2015	50, 55, 60, 65, 70 and 74
4	1 January 2016	31 December 2016	50, 55, 60, 64, 65, 70, 72 and 74
4	1 January 2017	31 December 2017	50, 54, 55, 58, 60, 64, 68, 70, 72 and 74
4	1 January 2018	31 December 2018	50, 54, 58, 60, 62, 64, 66, 68, 70, 72 and 74
4	1 January 2019	ongoing	50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72 and 74

(a) Eligible birth dates, and thus invitations, ended on 31 December 2010.

(b) Ongoing NBCSP funding commenced.

Note: The eligible population for all Phase 2 and 3 start dates incorporates all those turning the target ages from 1 January of that year onwards.

Changes in monitoring the NBCSP

Regular users of annual NBCSP monitoring reports will notice that, from the *National Bowel Cancer Screening Program: monitoring report 2016* (AIHW 2016) onwards, monitoring reports differ from those released earlier. For a full summary of changes to the performance indicators, reporting period and structure of the report since 2016, please see *National Bowel Cancer Screening Program: monitoring report 2019* (AIHW 2019b). This section includes only the major changes since the 2019 monitoring report.

Changes to the data custodian

In November 2019, the NBCSP Register data were transitioned from the NBCSP Register, maintained by Services Australia (formerly the Department of Human Services), to the National Cancer Screening Register (NCSR), maintained by Telstra Health. This is the third NBCSP monitoring report to use data extracted from the NCSR. The NCSR is a live

database which is updated over time and later reports using these data may have a greater level of completeness.

Preliminary NBCSP participation data for 2020–2021 were published in January 2023. These preliminary data have been updated in this release. This has resulted in a small change in some results. For improved accuracy, we have reported participation data to one decimal place in this release.

The performance indicators in this report use data collected for the NCSR (January 2020 to December 2023). However, this report also summarises trends from 2007–2008 to 2020–2021 in program participation rate (PI 1), diagnostic assessment rate (PI 3), and time between positive screen and diagnostic assessment (PI 4). These trends use data collected for the NBCSP Register as well as data collected for the NCSR.

Changes to determining Indigenous status from the NCSR

This report uses both the Person and PersonHistory table in the NCSR to determine a person's self-identified Indigenous status. Firstly, the most recently reported Indigenous status in the Person table is used. For those where this value is not stated, any historical Indigenous status values available in the PersonHistory table are used, with a preference to Indigenous over non-Indigenous status if multiple values have been selected in the past.

Changes to the cohort monitored

Each indicator uses the latest available data rather than presenting results for the same invitation cohort across all indicators. This means that some indicators report results for different time periods than others and therefore for different cohorts. Where possible, indicator reporting periods in this report include the time frame 1 January 2021 to 31 December 2021.

Changes to reporting of estimated participation by disability status

Due to changes in data completeness by self-reported disability status in NBCSP records prior to migration to the NCSR (in November 2019), estimated participation by disability status cannot be reported in this report. See Appendix F for further information.

Estimated incidence and mortality numbers

This report includes 2023 estimates for bowel cancer incidence and mortality rather than actual numbers, which are not yet available for 2023. Estimates for 2023 provide relevant data closest to the timing of this report. The latest actual (non-estimated) incidence and mortality data are used to produce statistics by state and territory, remoteness and socioeconomic areas, and by Indigenous status, as 2023 estimates for these disaggregations are not yet available.

Changes to incidence and mortality populations and rates for Indigenous Australians

To derive bowel cancer incidence and mortality rates for Indigenous Australians, this report used Indigenous population estimates and projections based on the 2016 Census (the most recent estimates available when this report was prepared).

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 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. These rates should not be compared with rates calculated using populations based on previous Censuses.

Changes to coding bowel cancer mortality

The Australian Institute of Health and Welfare (AIHW) uses the National Mortality Database (NMD) for reporting cancer mortality. The NMD is coded and compiled by the Australian Bureau of Statistics (ABS), and ABS advice notes that where 'bowel cancer' is recorded on the death certificate, internationally agreed rules state that the cancer should be coded to a less specific code (C26.0) as the specific site of the cancer is not known (ABS 2016). The ABS advises that the use of code C26.0 for 'bowel cancer' deaths leads to undercounting due to cancers of the colon and rectum (C18–C20). For this reason, monitoring reports from 2019 onwards use C18–C20, and include C26.0 when reporting deaths from bowel cancer using the NMD. This differs from versions of this report prior to 2020 (which did not include C26.0) and will result in a greater number of deaths being attributed to bowel cancer.

Improvements to the valid invitations count

For data from 2020 onwards, improvements have been made to exclude a number of incorrectly recorded invitations within the NCSR. This includes identifying and excluding prospective invitees without a valid mailing address. A non-valid address may be a result of the NCSR not recognising a current postal address, or a return to sender flag has previously been recorded against the invitee and their given address.

Improvements to the known colonoscopy count

Due to incomplete colonoscopy form return for those having a follow-up diagnostic assessment after a positive screen, this report now supplements colonoscopy form data and MBS claims with Participant follow-up function (PFUF) data. This means data for PIs 3,4, and 9 from 2021 onwards cannot be compared with previous years.

The PFUF is a system whereby participants who have had a positive screen are contacted by program officers in their jurisdiction if a follow-up diagnostic assessment has not been recorded in the NCSR within a certain period. Any PFUF confirmation of a colonoscopy having occurred is then used in this report to supplement colonoscopy form data and MBS claims. While this can be used to improve the *number* of colonoscopies known to have taken place for program participants, it does not improve colonoscopy *outcome* data (that is, the diagnostic findings from these additional colonoscopies are not known).

From 2021 onwards, Chapter 4 outcome data only includes colonoscopies known from colonoscopy or histopathology form, as only colonoscopies from these sources record outcomes. Therefore, these outcome data should not be compared with previous years.

Appendix D: Data sources

To provide a comprehensive picture of national cancer statistics in this report, a range of data sources were used, including AIHW and external data sources. These data sources are described in this appendix.

Australian Burden of Disease Study

The Australian Burden of Disease Study (ABDS) 2022 used burden of disease analysis to measure the impact of 219 diseases and injuries on the health of the Australian population. The study provides a detailed picture of the burden of disease in the population in 2003, 2011, 2015, 2018, and 2022 (with 2022 being projected estimates). It includes estimates of total, fatal, and non-fatal burden for the total Australian population.

The ABDS 2018 includes the latest subnational burden of disease estimates, (by state and territory, remoteness area and socioeconomic area). It also includes estimates of the contribution made by selected risk factors on the disease burden in Australia, and by socioeconomic areas for some risk factors.

The ABDS uses and adapts the methods of global studies to produce estimates that are more relevant to the Australian health policy context.

Results from the study provide an important resource for health policy formulation, health service planning, and population health monitoring. The results provide a foundation for further assessments; for example, in relation to health interventions that aim to prevent or treat diabetes and its complications, and disease expenditure.

Full details on the various methods, data sources, and standard inputs used in the ABDS are available in *Australian Burden of Disease Study 2018: methods and supplementary material* (AIHW 2021b).

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 registries is supplied annually to the AIHW, where it is compiled into the Australian Cancer Database (ACD). The ACD used in this report currently contains data on all cases of cancer diagnosed from 1982 to 2019 for all states and territories.

Cancer reporting and registration is a dynamic process, and records in the state and territory cancer registries may be modified if new information is received. As a result, 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 same year.

The 2020–2023 estimates for incidence were derived using a combination of ABS estimated resident populations and Centre for Population projections, as described in the technical notes of *Cancer data in Australia* (AIHW 2022a).

The latest Data Quality Statement for the ACD can be found on the AIHW website at https://meteor.aihw.gov.au/content/index.phtml/itemId/757686.

National Bowel Cancer Screening Program

This report uses National Cancer Screening Register (NCSR) data (raw data extract as at 14 January 2023) to present statistics on the progression of eligible participants along the screening pathway for those invited into the National Bowel Cancer Screening Program (NBCSP). It covers measures of participation, iFOBT results, and follow-up investigations and outcomes. However, data for follow-up investigations rely on non-mandatory form return from clinicians and are incomplete. Analyses are presented by age, sex, state and territory, remoteness and socioeconomic areas, Indigenous status, preferred language spoken at home, and disability status.

From mid-November 2019, the NBCSP Register data were transitioned from the Department of Health Services to the NCSR. Following the transition, the NCSR is now the sole source of NBCSP data in Australia.

The Data Quality Statement for the NBCSP can be found on the AIHW website at http://meteor.aihw.gov.au/content/index.phtml/itemId/762061.

National Death Index

The National Death Index is a database, housed at the AIHW, which contains records of all deaths occurring in Australia since 1980. The data are obtained from the registrars of Births, Deaths and Marriages in each state and territory. The National Death Index is designed to facilitate the conduct of epidemiological studies and its use is strictly confined to medical research.

Cancer incidence records from the ACD were linked to the National Death Index and used to calculate the survival and prevalence data presented in this report.

The Data Quality Statement for the National Death Index can be found at http://meteor.aihw.gov.au/content/index.phtml/itemId/480010.

National Mortality Database

The AIHW National Mortality Database (NMD) contains information supplied by the registrars of Births, Deaths and Marriages and the National Coronial Information System – and coded by the ABS – for deaths from 1964 to 2021. Registration of deaths is the responsibility of the Registry of Births, Deaths and Marriages in each state and territory. 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 the death occurred and the year in which it was registered are provided. For the purposes of this report, actual mortality data are shown based on the year the death occurred, except for the most recent year (2021), where the number of people whose death was registered is used. Previous investigation has shown that the year of death and its registration coincide for the most part. However, in some instances, deaths at the end of each calendar year may not be registered until the following year. Thus, year of death information for the latest available year is generally an underestimate of the actual number of deaths that occurred in that year.

In this report, deaths registered in 2018 and earlier are based on the final version of cause of death data; deaths registered in 2019 are based on the revised version; and deaths registered in 2020–2021 are based on preliminary versions. Revised and preliminary versions are subject to further revision by the ABS.

The 2022–2023 estimates for mortality were based on the 2010–2019 NMD and were derived using a combination of ABS estimated resident populations and Centre for Population projections, as described in the technical notes of *Cancer data in Australia* (AIHW 2022a).

The data quality statements underpinning the AIHW NMD can be found on the following ABS internet pages:

- ABS quality declaration summary for Deaths, Australia https://www.abs.gov.au/methodologies/deaths-australia-methodology/2021
- ABS quality declaration summary for Causes of death, Australia https://www.abs.gov.au/methodologies/causes-death-australia-methodology/2021

For more information on the AIHW NMD, see: https://www.aihw.gov.au/about-our-data/our-data-collections/national-mortality-database/.

Lastly, the ABS has noted that there is a high likelihood that many deaths coded to ICD-10 code 'C26.0 Malignant neoplasms of the intestinal tract, unspecified' are deaths from colon, sigmoid, rectum, and anus cancers (ABS 2016). Therefore, deaths coded as C26.0 have been included in bowel cancer deaths throughout this report (and in monitoring reports from 2019 onwards).

Population data

Throughout this report, population data were used to derive bowel cancer incidence and mortality rates. The population data were sourced from the ABS using the most up-to-date estimates available at the time of analysis.

To derive its estimates of the resident populations, the ABS uses the 5-yearly Australian Census of Population and Housing data and adjusts them 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 people 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 Australian Census data, using indicators of population change, such as births, deaths, and net migration. More information is available from the ABS website at http://www.abs.gov.au.

The projected incidence and mortality rates cited for 2023 in this report will sometimes differ from the rates that would occur if the Centre for Population data were used to calculate rates.

For the Indigenous incidence and mortality comparisons in this report, the most recently released ABS Indigenous estimated resident populations (based on the 2016 Census of Population and Housing (ABS 2018)) were used for 2015 and 2016. While ABS Indigenous projections (also based on the 2016 Census) were used for 2017–2019.

Appendix E: Classifications

International Classification of Diseases for Oncology

Cancers were originally classified solely under the International Classification of Diseases and Related Health Problems (ICD) classification system, based on topographic site and behaviour. However, during the creation of the 9th Revision of the ICD in the late 1960s, working parties suggested creating a separate classification for cancers that included improved morphological information. The first edition of the International Classification of Diseases for Oncology (ICD-O) was subsequently released in 1976 and, in this classification, cancers were coded by both morphology (histology type and behaviour) and topography (site).

Since that first edition of the ICD-O, a number of revisions have been made, mainly in the area of lymphomas and leukaemias. The current edition, the 3rd Edition (ICD-O-3), was released in 2000 and is used by most state and territory cancer registries in Australia, as well as by the AIHW in regard to the ACD.

Index of Relative Socio-economic Disadvantage

The Index of Relative Socio-economic Disadvantage (IRSD) is one of 4 Socio-Economic Indexes for Areas developed by the ABS. This index 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 corresponds to geographical areas containing the 20% of the population with the greatest socioeconomic disadvantage according to the IRSD, and the fifth area corresponds to the 20% of the population with the least socioeconomic disadvantage. Caution should always be used when analysing the results of data that have been converted using correspondences, with the potential limitations of the data considered.

Socioeconomic areas for screening data

Participants' areas of residence were assigned to socioeconomic areas using the participant's residential postcode according to the IRSD for 2016. Socioeconomic groupings (based on IRSD rankings) were calculated with a postal area correspondence, using a population-based method at the Australia-wide level. Participants whose postcode was not available in the socioeconomic correspondence were included in an 'Unknown' column in the relevant tables.

Socioeconomic areas for incidence and mortality

Socioeconomic disadvantage areas were assigned to cancer cases according to the IRSD for 2011 of the Statistical Area Level 2 of residence at the time of diagnosis, and to deaths according to the Statistical Area Level 2 of residence at the time of death. The 2011 IRSD classifications were used for cancer cases as data were more complete using the 2011 Statistical Area Level 2 than the 2016 Statistical Area Level 2 within the 2019 ACD. For consistency between incidence and mortality reporting, 2011 classifications were also used for mortality reporting.

International Statistical Classification of Diseases and Related Health Problems

The ICD is used to classify diseases and other health problems (including symptoms and injuries) in clinical and administrative records. The use of a standard classification system enables the storage and retrieval of diagnostic information for clinical and epidemiological purposes that is comparable between different service providers, across countries and over time.

In 1903, Australia adopted the ICD to classify causes of death and it was fully phased in by 1906. Since 1906, the ICD has been revised 9 times in recognition of new diseases (for example, acquired immunodeficiency syndrome, or AIDS), increased knowledge of diseases, and changing terminology in describing diseases. The version currently in use, the ICD-10 (WHO 1992), was endorsed by the 43rd World Health Assembly in May 1990 and officially came into use in World Health Organization member states from 1994.

International Statistical Classification of Diseases and Related Health Problems, Australian Modification

The Australian modification of the ICD-10, referred to as the ICD-10-AM (NCCH 2010), is based on the ICD-10. The ICD-10 was modified for the Australian setting by the National Centre for Classification in Health, with assistance from clinicians and clinical coders. Despite the modifications, compatibility with the ICD-10 at the higher levels of the classification (that is, up to 4-character codes) has been maintained. The ICD-10-AM has been used to classify diagnoses in hospital records in all states and territories since 1999–2000 (AIHW 2000).

Remoteness Areas

The Remoteness Areas divide Australia for statistical purposes into broad geographical regions that share common characteristics of remoteness. 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 in the Remoteness Structure: *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.

Remoteness Area for screening data

Postcodes of participants were mapped to the 2016 Australian Statistical Geography Standard Remoteness Areas. Residential postcodes were used where available, with non-residential identifiers (such as post office boxes) used otherwise. As some postcodes can span different Remoteness Areas, a weighting for each Remoteness Area is attributed to the postcode. This can result in non-integer counts for remoteness classifications. For example, the Northern Territory postal area 0822 is classified as 62.3% *Very remote*, 20.3% *Remote* and 17.3% *Outer regional*. Participants with postcode 0822 have their counts apportioned accordingly.

Remoteness Area for incidence and mortality

Each unit record in the ACD contains 2011 Statistical Area Level 2 and 2016 Statistical Area Level 2, but not the Remoteness Area. To calculate both the cancer incidence rates and the cancer mortality rates by Remoteness Area, a correspondence was used to map the 2011 Statistical Area Level 2 to the 2011 Remoteness Area. The 2011 Statistical Area Level 2 classification was used for cancer cases as data were more complete using that than the 2016 Statistical Area Level 2 classification within the 2019 ACD. For consistency between incidence and mortality reporting, 2011 classifications were also used for mortality reporting.

Tables in this report based on geographical location were rounded to integer values. Where figures were rounded, discrepancies may occur between totals and sums of the component items. Participants whose postcode was not available in the remoteness correspondence were included in an ‘Unknown’ column in the relevant tables.

Appendix F: Methodology for calculating participation for population subgroups

Determining participation rates by Indigenous status, preferred language spoken at home, and disability status requires the number of screening invitations sent out to members of each of these population groups (the denominator) as well as the number of people in each group who returned a completed screening kit (the numerator).

Unfortunately, at present, information on these groups is known only for participants who choose to identify when they return a completed details form along with their iFOBT for analysis (the numerator). That is, identification of these population groups is known only for the 40.9% of people who participated, not for all invitees. As a result, it is not possible to accurately determine participation rates for these population groups.

An alternative method to estimate the number of invitations sent out to people in these population groups involves using the percentages of those aged 50–74 who reported as such in the 2021 Census.

To do so, percentages based on Census counts (tables F1–F3) have been applied to the number of overall invitations (by age group and sex) to estimate invitation volumes by population groups. These estimated denominator data can then be used with the known population group numerator data gained from the returned participant details forms of those who participated.

Estimated participation by Indigenous status

There are limitations in the data available to estimate Indigenous Australians' participation in the NBCSP, due to differences in the 'not stated' proportions between the 2020–2021 NBCSP participation data and the 2021 Census data (3.7% and 4.5% 'not stated', respectively). An overall participation rate for invitees who self-identified as Indigenous has been estimated, but these limitations should be considered when interpreting these data.

Opportunities to improve the accuracy of calculating Indigenous participation rates will continue to be explored. New information may become available that enables improved estimates to be produced for future reports.

Table F1: Percentage of the population by Indigenous status as identified in the 2021 Census, by sex and age

		%		
Sex	**Age group (years)**	**Indigenous**	**Non-Indigenous**	**Not stated**
Males	50–54	2.40	92.36	5.24
	55–59	2.10	92.73	5.17
	60–64	1.87	93.28	4.85
	65–69	1.53	93.79	4.68
	70–74	1.14	94.27	4.59
	50–74	*1.86*	*93.20*	*4.94*
Females	50–54	2.59	93.35	4.06
	55–59	2.27	93.60	4.12
	60–64	1.94	94.12	3.94
	65–69	1.59	94.38	4.03
	70–74	1.19	94.62	4.19
	50–74	*1.97*	*93.96*	*4.06*
Persons	50–54	2.50	92.87	4.64
	55–59	2.19	93.18	4.63
	60–64	1.91	93.71	4.38
	65–69	1.56	94.10	4.34
	70–74	1.17	94.45	4.38
	50–74	**1.92**	**93.59**	**4.49**

Source: 2021 Census.

Estimated participation by language spoken at home

Census data for population subgroups broken down by the language they spoke at home include a ‘not stated’ percentage for those who did not respond to this question (Table F2). This is equal to the ‘not stated’ option for those who participate and choose not to provide population group information.

For preferred language spoken at home, the NCSR assumes all who do not self-identify a language speak English. As a result, there is no ‘not stated’ language spoken at home data for participants (numerator) to match the ‘not stated’ percentage data from the Census (used for the denominator).

To resolve this issue, a participation range method was used for language spoken at home. The rate is provided as a range that covers what the percentage would be if the entire ‘not stated’ percentage was added to the ‘English’ column, and what it would be if the entire ‘not stated’ percentage was added to the ‘Language other than English’ column (Table 5.4).

Table F2: Percentage of the population by language spoken at home as self-identified in the 2021 Census, by sex and age

		%		
Sex	**Age group (years)**	**English**	**Language other than English**	**Not stated**
Males	50–54	74.89	19.14	5.98
	55–59	76.08	18.17	5.75
	60–64	78.15	16.50	5.35
	65–69	78.95	15.83	5.22
	70–74	80.07	14.70	5.23
	50–74	*77.41*	*17.05*	*5.54*
Females	50–54	74.72	20.85	4.43
	55–59	75.83	19.72	4.44
	60–64	77.19	18.50	4.31
	65–69	77.57	17.95	4.48
	70–74	78.96	16.19	4.85
	50–74	*76.70*	*18.82*	*4.49*
Persons	50–54	74.80	20.01	5.19
	55–59	75.96	18.96	5.08
	60–64	77.66	17.53	4.81
	65–69	78.24	16.93	4.84
	70–74	79.50	15.47	5.03
	50–74	**77.04**	**17.96**	**5.00**

Source: 2021 Census.

Estimated participation by disability status

Census data for population subgroups broken down by disability status include a ‘not stated’ percentage for those who did not respond to this question (Table F3). This should equate to the ‘not stated’ option for those who participate and choose not to provide population group information.

Using the Census data to estimate denominators, estimated participation rates by disability status were able to be calculated (Table 5.5).

Table F3: Percentage of the population by disability status as self-identified in the 2021 Census, by sex and age

		%		
Sex	**Age group (years)**	**Has need for assistance with core activities**	**Does not have need for assistance with core activities**	**Not stated**
Males	50–54	3.60	90.15	6.26
	55–59	4.64	89.33	6.03
	60–64	6.15	88.23	5.62
	65–69	7.94	86.67	5.39
	70–74	10.95	83.72	5.33
	50–74	*6.34*	*87.89*	*5.77*
Females	50–54	4.12	91.18	4.70
	55–59	5.20	90.08	4.72
	60–64	6.62	88.86	4.52
	65–69	8.26	87.12	4.62
	70–74	11.45	83.73	4.82
	50–74	*6.84*	*88.48*	*4.67*
Persons	50–54	3.86	90.67	5.46
	55–59	4.93	89.72	5.36
	60–64	6.39	88.56	5.05
	65–69	8.10	86.90	4.99
	70–74	11.21	83.72	5.07
	50–74	**6.60**	**88.20**	**5.20**

Source: 2021 Census.

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Abbreviations

ABDS	Australian Burden of Disease Study
ABS	Australian Bureau of Statistics
ACD	Australian Cancer Database
ACT	Australian Capital Territory
AIHW	Australian Institute of Health and Welfare
ASGS	Australian Statistical Geography Standard
ASR	age-standardised rate
DALY	disability-adjusted life year
ICD	International Classification of Diseases and Related Health Problems
ICD-O	International Classification of Diseases for Oncology
iFOBT	immunochemical faecal occult blood test
IRSD	Index of Relative Socio-economic Disadvantage
LOTE	language other than English
MBS	Medicare benefits schedule
NBCSP	National Bowel Cancer Screening Program
NCSR	National Cancer Screening Register
NMD	National Mortality Database
NSW	New South Wales
NT	Northern Territory
PFUF	Participant follow-up function
PHCP	primary health-care practitioner (general practitioner or other primary health-care provider)
PI	performance indicator
PPV	positive predictive value
Qld	Queensland
RDE	raw data extract
SA	South Australia
Tas	Tasmania
TNM	Tumour, Nodes and Metastasis
Vic	Victoria
WA	Western Australia
YLD	years lived with disability
YLL	years of life lost

Symbols

—	nil or rounded to zero
. .	not applicable
>	greater than
≤	less than or equal to
n.a.	not available
n.p.	not publishable because of small numbers, confidentiality or other concerns about the quality of the data
N	number

Glossary

Note: Terms in bold within definitions are defined elsewhere in the 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**.

adenocarcinoma: A **cancer** that began in a glandular epithelial cell (see **epithelium**).

adenoma (adenomatous polyp): A **benign** tumour that arises from epithelial cells (see **epithelium**). All adenomas have **malignant** potential. Adenomas in the rectum or colon have a higher chance of developing into **cancer** (see **adenocarcinoma**) than adenomas in most other organs. An adenoma can be classified from highest risk (advanced) to lowest risk (diminutive).

age-specific rate: The number of cases occurring in each specified age group by the corresponding population in the same age group, expressed as 'per 100,000 people'.

age-standardised rate (ASR): 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.

asymptomatic: Describes being without **symptoms**.

benign: Describes non-cancerous tumours that may grow larger but do not spread to other parts of the body. Not **malignant**.

bowel (colorectal) cancer: A cancer definition that comprises both **cancer** of the colon and cancer of the rectum.

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.

cancer (malignant neoplasm): A large range of diseases whose common feature is that 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 through the circulatory and lymphatic systems to cause further damage.

colonoscopy: A diagnostic assessment procedure to examine the bowel using a special scope (colonoscope), usually carried out in a hospital or day clinic.

conditional relative survival: The probability of surviving a given number of years, provided that an individual has already survived a specified amount of time after diagnosis (usually 5 or 10 years). Compare with **relative survival**.

crude rate: The number of events over a specified period (for example, a year) divided by the total population. The crude rate (for participation, attendance and follow-up) is the proportion of people who have proceeded to a key point on the screening pathway (at the date of the data extraction) out of those eligible to proceed to that point.

The crude proportions will generally underestimate the true proportions of the population that participated in the National Bowel Cancer Screening Program. This is because, at any point in time, there are members of the population who are eligible to proceed to the next point on the screening pathway but who have not yet had time to do so. Similarly, there is a time lag

between when a person with a positive **iFOBT result** is referred for a **colonoscopy** and when they can have the procedure.

defer: Describes the action of an invitee who would like to participate in the National Bowel Cancer Screening Program but is unable to do so at this time. Such invitees will be contacted once the nominated deferral period has elapsed. Compare with **opt out**.

disability-adjusted life year (DALY): A year of healthy life lost, either through premature death or equivalently through living with disability due to illness or injury. It is the basic unit used in burden of disease and injury estimates.

epithelium: The tissue lining the outer layer of the body, the digestive tract and other hollow organs and structures.

false negative: A screening test result that incorrectly indicates a person does not have a marker for the condition being tested when they do have the condition. Not all screening tests are completely accurate, so false negative results cannot be discounted. Further, with an **iFOBT**, if a **polyp**, **adenoma**, or **cancer** is not bleeding at the time of the test, it may be missed by the screening test.

false positive: A screening test result that incorrectly indicates that a person has the marker being tested when they do not have the condition. As **iFOBTs** detect blood in stool (which may be caused by a number of conditions), a false positive finding for bowel cancer may still detect other non-bowel cancer conditions, or precancerous **polyps** or **adenomas**.

histopathology: The microscopic study of the structure and composition of tissues and associated disease.

immunochemical faecal occult blood test (iFOBT): immunochemical faecal occult blood test—a self-administered test to detect blood in bowel motions, but not bowel cancer itself. The iFOBT is analysed by a pathology laboratory, and results forwarded to the participant and primary health care practitioner (if nominated). The 2-sample screening kits can have an overall adequacy rating of:

- Expired: the kit was returned after the expiry date of the sample tubes
- Unsatisfactory: the kit was received greater than 28 days from the first sample date
- Not received: the kit was returned without the sample tubes
- Spoiled / Damaged: both sample tubes in the returned kit were spoiled or damaged

These first 4 adequacy ratings are given an overall result of *No result*. The final potential adequacy rating is:

- Correctly completed: the sample tubes were not judged in the above categories overall.

  Overall results of the correctly completed kits are then categorised into:

  - *Positive*: at least one sample was positive (≥ 20 µg Haemoglobin per gram faeces) for occult blood, regardless of the other sample
  - *Negative*: both samples were negative for occult blood
  - *Inconclusive*:
    - one sample was negative, and the other sample was Spoiled/Damaged or Not received, or
    - both samples were negative but the kit was received at the lab greater than 14 days since the first sample was taken.

Positive and negative overall results are used in positivity calculations. No result and Inconclusive results are resent a replacement kit by the pathology laboratory.

incidence: The number of new cases (of an illness or event, and so on) occurring during a given period, usually 1 year. Compare with **prevalence**.

Indigenous: A person of Aboriginal and/or Torres Strait Islander descent who identifies as Aboriginal and/or Torres Strait Islander. See also **Aboriginal or Torres Strait Islander**.

interval cancer: A bowel cancer that is diagnosed after completion of a negative screening episode and before the next screening examination or within 24 months of a negative screening episode, whichever comes first.

invitee: A person invited to participate in the National Bowel Cancer Screening Program.

lymph node: A mass of lymphatic tissue, often bean-shaped, that produces adaptive immune system cells and through which lymphatic fluid filters. These nodes are located throughout the body.

malignant: Describes tumours with the capacity to spread to surrounding tissue or to other sites in the body.

metastasis: The process by which cancerous cells are transferred (or spread) from one part of the body to another; for example, via the lymphatic system or the bloodstream.

morbidity: Ill health in an individual, or the level of ill health in a population or group.

mortality: The number of deaths occurring during a given period.

new cancer case: A person who has a new cancer diagnosed for the first time. One person may have more than one cancer and therefore may be counted more than once in incidence statistics if it is decided that the additional 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 at al. (1991).

non-valid address: A non-valid address may be a result of the NCSR not recognising a current postal address, or a return to sender flag is currently recorded against the invitee and their given address.

opt out: Describes what invitees do who advise that they do not wish to participate in the National Bowel Cancer Screening Program, now or in the future. Invitees who opt out will not be contacted again. Invitees may elect to opt back in at a later date.

participant: A person who has agreed to participate in the National Bowel Cancer Screening Program by returning a completed **iFOBT** kit and participant details form.

polyp: A small growth of colon tissue that protrudes into the colonic or rectal lumen. Polyps are usually asymptomatic, but sometimes cause visible rectal bleeding and, rarely, other symptoms. Most polyps are **benign**. **Adenomatous polyps** are more likely to become **malignant** than other types of polyps.

polypectomy: The removal of a **polyp** or **adenoma**.

positive predictive value: Proportion of people with a positive **iFOBT** screen who have **adenomas** or **cancer** detected at **colonoscopy** and confirmed by **histopathology**.

prevalence: The total number of people alive at a specific date who have been diagnosed with a particular disease (such as cancer) within a defined period.

primary health-care practitioner (PHCP): A general practitioner or other primary health-care provider. This may include remote health clinics or specialists providing general practitioner services.

prognosis: The likely outcome of an illness.

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

relative survival: A measure of the average survival experience of a population of people diagnosed with cancer, relative to the 'average' Australian of the same sex and age, at a specified interval after diagnosis (usually 5 or 10 years). A 5-year relative survival figure of 100% means that the cancer has no impact on the person's chance of still being alive 5 years after diagnosis, whereas a figure of 50% means that the cancer has halved that chance.

screening: Repeated testing, at regular intervals, of **asymptomatic** people to detect a medical condition at an earlier stage than would otherwise be the case. Screening tests are not diagnostic (for example, see **false positive**, **false negative**, and **positive predictive value**); therefore, people who receive a positive screening result require further assessment and diagnosis to determine whether they have the disease or risk marker being screened for.

Skipping a round: As of November 2019, people who are potentially eligible for the National Bowel Cancer Screening Program but who have had a recent colonoscopy (within the last 2 years) are notified that they will skip a round of the **immunochemical faecal occult blood test (iFOBT)**, rather than being invited to participate**.**

stage: The extent of a **cancer** in the body. Staging is usually based on the size of the **tumour**, whether **lymph nodes** contain cancer, and whether the cancer has spread from the original site to other parts of the body (undergone **metastasis)**.

symptom: Any evidence of disease apparent to the patient. For the purposes of this report, symptoms can include visible rectal bleeding, change in bowel habit, bowel obstruction or anaemia.

target population: People who are actively targeted by the National Bowel Cancer Screening Program. This includes people aged 50–74 who were registered as Australian citizens or permanent migrants in the Medicare enrolment file, or are registered with a Department of Veterans' Affairs gold card.

tumour: An abnormal growth of tissue. Can be **benign** (not a **cancer**) or **malignant** (cancer).

underlying cause of death: The disease or injury that initiated the train of events leading directly to death, or the circumstances of the accident or violence that produced the fatal injury.

valid results: iFOBT results that are classified as either positive or negative. Inconclusive results are excluded.

Years lived with disability (YLD): A measure of the years of what could have been a healthy life but were instead spent in states of less than full health. YLD represent non-fatal burden.

Years of life lost (YLL): Years of life lost due to premature death, defined as dying before the global ideal life span at the age of death. YLL represent fatal burden.

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Related material

The following Australian Institute of Health and Welfare (AIHW) publications relating to bowel cancer and cancer screening more generally might also be of interest:

- AIHW (2023) *Cancer screening programs: quarterly data*, AIHW, Australian Government, accessed 20 Jan 2023.
- AIHW (2022) *National Bowel Cancer Screening Program monitoring report 2022*, AIHW, Australian Government, accessed 23 Mar 202. doi:10.25816/qgew-8f11
- AIHW (2021) *Cancer in Australia 2021*, AIHW, Australian Government, accessed 9 May 2022. doi:10.25816/ye05-nm50
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- AIHW (2018) *Analysis of bowel cancer outcomes for the National Bowel Cancer Screening Program 2018*, AIHW, Australian Government, accessed 23 Mar 2023.
- AIHW (2018) *Analysis of cancer outcomes and screening behaviour for national cancer screening programs in Australia*, AIHW, Australian Government, accessed 23 Mar 2023.
- AIHW (2014) *Analysis of bowel cancer outcomes for the National Bowel Cancer Screening Program*, AIHW, Australian Government, accessed 23 Mar 2023.
- AIHW (2014) *Key performance indicators for the National Bowel Cancer Screening Program: technical report*, AIHW, Australian Government, accessed 23 Mar 2023.

This report presents statistics on the National Bowel Cancer Screening Program (NBCSP) using key performance indicators. Of those who were invited to participate in the NBCSP between 1 January 2020 and 31 December 2021, 40.9% undertook screening. Among those who screened in 2021, 6% had a positive result warranting further assessment. Of the participants who underwent a follow-up diagnostic assessment, 1 in 27 was diagnosed with a confirmed or suspected cancer

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