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| Victorian cancer plan monitoring and evaluation framework  Data dictionary |
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| To receive this publication in an accessible format phone 1300 650 172, using the National Relay Service 13 36 77 if required, or [email Cancer Planning](mailto:cancerplanning@dhhs.vic.gov.au) <cancerplanning@dhhs.vic.gov.au>.  Authorised and published by the Victorian Government, 1 Treasury Place, Melbourne.  © State of Victoria, Department of Health and Human Services, first issued in June 2018; revised February 2020  Where the term ‘Aboriginal’ is used it refers to both Aboriginal and Torres Strait Islander people. Indigenous is retained when it is part of the title of a report, program or quotation.  ISBN 978-1-76069-374-9 (Word/pdf/online)  Available at [Cancer care](https://www2.health.vic.gov.au/about/health-strategies/cancer-care) <https://www2.health.vic.gov.au/about/health-strategies/cancer-care>  (1709015 cover) |
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# Abbreviations

|  |  |
| --- | --- |
| AATSIHS | Australian Aboriginal and Torres Strait Islander Health Survey |
| ABS | Australian Bureau of Statistics |
| AIHW | Australian Institute of Health and Welfare |
| ARIA+ | Accessibility/Remoteness Index of Australia |
| ASSAD | Australian School Students Alcohol and Drug Survey |
| BMI | body mass index |
| BSV | BreastScreen Victoria |
| CCV | Cancer Council Victoria |
| CNS | central nervous system |
| CVDL | Centre for Victorian Data Linkage DHHS |
| DET | Department of Education and Training (Victorian Government) |
| DHHS | Department of Health and Human Services (Victorian Government) |
| DoH | Department of Health (Australian Government) |
| DRG | diagnostic-related group |
| HPV | human papilloma virus |
| HRQOL | health-related quality of life |
| ICD | International Classification of Diseases |
| ICS | Integrated Cancer Services |
| IRSD | Index of relative socioeconomic disadvantage |
| LBOTE | Language background other than English |
| LGA | local government area |
| LGBTIQ | lesbian, gay, bisexual, trans, intersex, queer and/or questioning |
| LOS | Length of stay |
| NaSSDA | National Secondary Students’ Diet and Activity Survey |
| NBCSP | National Bowel Cancer Screening Program |
| NDSHS | National Drug Strategy Household Survey |
| NHMRC | National Health and Medical Research Council |
| NHS | National Health Survey |
| NNPAS | National Nutrition and Physical Activity Survey |
| MBS | Medical Benefits Scheme |
| PBS | Pharmaceutical Benefits Scheme |
| PET | positron emission tomography |
| PHESS | Public Health Event Surveillance System |
| PROM | patient-reported outcome measure |
| RD stage | registry-derived stage |
| ROGS | *Report on Government Services* |
| SA1 | Statistical Area 1 ABS |
| SACT | systemic anti-cancer therapy |
| SIA | Systems Intelligence and Analytics DHHS |
| SEIFA | Socio-Economic Indexes for Areas |
| TBD | to be determined |
| UVR | ultraviolet radiation |
| VAED | Victorian Admitted Episodes Dataset |
| VAHI | Victorian Agency for Health Information |
| VCHWS | Victorian Child Health and Wellbeing Survey |
| VCR | Victorian Cancer Registry |
| VDI | Victorian Death Index |
| VEMD | Victorian Emergency Minimum Dataset |
| VHES | Victorian Healthcare Experience Survey |
| VINAH | Victorian Integrated Non-Admitted Health dataset |
| VPHS | Victorian Population Health Survey |
| VRMDS | Victorian Radiotherapy Minimum Data Set |
| WHO | World Health Organization |

# Overview

The *Victorian cancer plan monitoring and evaluation framework* (‘the framework’) provides a transparent approach to monitoring and reporting progress of collective efforts to improve cancer outcomes for all Victorians.

The *Victorian cancer plan monitoring and evaluation framework: data dictionary* provides the metadata for each measure of the framework. About 25 data sources are identified to monitor cancer outcomes in Victoria and to assess inequalities between population groups and geographic areas. All data sources are for the total population or are representative of the total population, unless otherwise specified.

The data dictionary provides detailed technical specifications for every measure in the framework, specifically:

* the rationale for inclusion
* the definition of the measure (including numerator, denominator and mode of reporting)
* data source(s) and availability (including baseline year)
* what data breakdowns are available from each data source
* further information (including planned changes in guidelines, programs and reporting: comparability with other state, national or international data; and links with measures in the *Victorian public health and wellbeing outcomes framework*).

There are a limited number of measures in the framework to be determined and some where the data source is to be determined.

The framework will be reviewed every four years in line with the development of future Victorian cancer plans as successors to the *Victorian cancer plan 2016–2020*. Regular reviews will ensure the inclusion of: new relevant measures; definitions of undetermined measures and data sources in the current framework; and replacement of measures should the core components of cancer control or data availability change over time. Changes in the framework will require updates to the data dictionary.

# Measuring inequalities

One of the long-term goals of the *Victorian cancer plan 2016–2020* is achieve equitable outcomes for all Victorians by 2040. Inequalities will be assessed against the ‘best’ performing population, geographic area or comparable Integrated Cancer Services (ICS).

This goal will have been achieved when the following rate ratios are not significantly different from 1.0:

* rate ratio of cancer incidence between ICS
* rate ratio of cancer incidence between socioeconomic status quintiles
* rate ratio of cancer incidence between Aboriginal and non-Aboriginal Victorians
* rate ratio of premature death rate due to cancer between ICS
* rate ratio of premature death rate due to cancer between socioeconomic status quintiles
  + rate ratio of premature death between Aboriginal and non-Aboriginal Victorians.

In addition to monitoring achievement of this goal, the *Victorian cancer plan monitoring, and evaluation framework* enables reporting for population groups and geographic areas where data is available and reporting appropriate, including an adequate number of cases or survey respondents for robust reporting.

The potential breakdowns for reporting are:

* age
* sex
* Aboriginal Victorians
* culturally diverse
* socioeconomic status
* metropolitan/rural
* ICS
* regions
  + local government areas (LGA).

In addition, the measures in the framework, which are also measures in the *Victorian public health and wellbeing outcomes framework*, will be reported for adults with a disability, adults who identify as lesbian, gay, bisexual, trans and/or intersex (LGBTIQ), adults with poor mental health and adults with chronic disease, and for comparable populations.

Victorian or national standards for measuring some of these characteristics exist and, for others, there is no agreed measurement standard. Therefore, different data sources will measure and define them differently. For the purposes of reporting against the framework, similar definitions are used where possible to provide a comprehensive picture of cancer outcomes of Victorians. The specific way any characteristic is defined and measured is available from the data owner.

The measures and definitions of Aboriginal Victorians, culturally diverse, socioeconomic status and geographic areas for the data sources included in the framework are described below.

## Aboriginal Victorians

Reporting for Aboriginal Victorians in the framework is derived from:

* Self-identification as Aboriginal or Torres Strait Islander, or both, based on the Australian Bureau of Statistics (ABS) Standard Indigenous Question. Data for Aboriginal Victorians derived from the Victorian Population Health Survey (VPHS) Department of Health and Human Services (DHHS), *About You* Department of Education and Training (DET), the Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS) ABS and Causes of Death ABS are based upon a person’s indigenous status determined by their response to this question.
* For measures reported using data derived in part or fully from the Victorian Cancer Registry (VCR) DHHS, identification of Aboriginal Victorians is derived by linking the VCR with the Victorian Admitted Episodes Dataset (VAED) DHHS, Victorian Emergency Minimum Dataset (VEMD) DHHS, Victorian Radiotherapy Minimum Dataset (VRMDS) DHHS and Victorian Death Index (VDI) DHHS. If a person identifies as an Aboriginal Victorian in one of these datasets, they are classified as an Aboriginal Victorian.

## Culturally diverse

Culturally diverse is an umbrella term designed to include migrants, temporary residents, international students, refuges and asylum seekers, as well as their descendants. It is commonly used to describe people who have a cultural heritage different from that of the majority of people from the Anglo-Australian culture.

Reporting for culturally diverse populations is based on three classification schemes. Each of these schemes provides a very broad aggregation of culturally diverse people, where there will be considerable heterogeneity within the category:

* language spoken in their country of birth, categorised as ‘English’ or ‘language other than English’ (used in VCR DHHS)
* preferred language, categorised as ‘English’ or ‘language other than English’ (used in VAED DHHS)
* principal language spoken at home, categorised as ‘English’ or ‘language other than English’ (used in surveys where reporting by cultural diversity is available); measures derived from *About You* DET classify the reporting as ‘language background other than English’ (LBOTE) and ‘English’*.*

## Socioeconomic status

Socioeconomic status reporting of measures in the framework is based on two classification schemes, which are noted in the available breakdowns for each measure:

* categories of total annual household income of respondents (used by VPHS DHHS)
* the ABS Socio-Economic Indexes for Areas (SEIFA) Index of Relative Socioeconomic Disadvantage (IRSD) quintiles (used by other data sources where reporting by socioeconomic status is available).

## Geographic

### Integrated Cancer Services

Victoria’s ICS comprise clusters of hospitals and associated health services that deliver services for people with all types of cancers within a geographic area. One of the ICS is statewide and focuses on paediatric cancer care. The role of the ICS is to promote system integration across structural boundaries and to encourage collaborative approaches to evidence-based service development.

For population health reporting in this framework, people are categorised to the geographical ICS based on their usual residence at the time of their cancer diagnosis. People may be treated for their cancer within the ICS of their usual residence, in another ICS or in multiple ICS.

Patient record audits or surveys are the data sources for a small number of measures in the framework, all in the key result area of increase adherence to optimal care pathways. These data sources are facility- or ICS-specific and thus reporting does not relate to the usual residence of people at the time of their cancer diagnosis.

### Regions

For data derived from the VPHS DHHS, *About you* DET, Victorian Child Health and Wellbeing Survey (VCHWS) DET and Public Health Event Surveillance System (PHESS) DHHS, the measures are reported for regions. The regions are the eight DHHS operational areas. Three regions are classified as metropolitan regions and five as rural regions of Victoria.

### Metropolitan/rural

Metropolitan and rural data for measures is derived from two classification schemes:

* Accessibility/Remoteness Index of Australia (ARIA+) has three categories in Victoria: major cities, inner regional and outer regional.
* For data derived from the VPHS DHHS, *About you* DET and VCHWS DET the measures are reported for regions and can also be reported for the aggregate of the three metropolitan regions and for the five rural regions.

### Local government authorities

In 2016 there were 79 LGAs in Victoria. Data from the VPHS is reported for LGAs every three years. Data from the VCR will be reported by LGA for the purposes of this framework, noting that LGA boundaries do not universally align with ABS Statistical Area 1 (SA1) boundaries, the smallest geographic unit of standard codes in the VCR.

# Technical notes

Where appropriate, proportions and rates are adjusted for age and sex to enable comparison between sociodemographic population groups, geographic areas and trends over time.

The definition of measures in the *Victorian cancer plan monitoring and evaluation framework* includes data codes used in one or multiple data sources. Below are data codes for a number of framework measures.

International Classification of Disease (ICD)-10 codes-AM[[1]](#footnote-1) for underlying causes of death and cancer incidence

| Cancer site | ICD-10 codes |
| --- | --- |
| All cancers (deaths) | C00–C97 |
| All cancers (incidence) | C00–C96 |
| All solid tumours | C00–C76, C80 |
| Oesophagus | C15 |
| Colorectal | C18–C20 |
| Liver | C22 |
| Pancreas | C25 |
| Lung | C33, C34 |
| Melanoma | C43 |
| Female breast | C50 |
| Cervix | C53 |
| Ovary | C56 |
| Prostate | C61 |
| Bran and central nervous system (CNS) | C70–C72 |
| Brain | C71 |
| Haematological | C81–C96 |
| Acute myeloid leukaemia | C92.0 |

Diagnose and procedures

| Diagnosis or procedure | Reference |
| --- | --- |
| Systemic anti-cancer therapy | Diagnostic-Related Group (DRG) R63Z (code does not include oral or subcutaneous therapy) |
| Oral chemotherapy | Pharmaceutical Benefits Scheme (PBS) codes to be determined (TBD) |
| Surgery | As listed in the *Victorian performance framework*, available upon request |
| Radiotherapy | No code applicable: All patients included in VRMDS have had radiotherapy or DRG R64Z for multiday |
| Positron emission tomography (PET) | Medical Benefits Scheme (MBS) codes TBD |
| Molecular diagnostics | MBS codes TBD |
| Fertility preservation | MBS codes TBD |

Cancer-related diagnostic-related groups (AR-DRG) V7.0: Hospital separations from 1 July 2014 to 30 June 2016

| DRG | DRG description |
| --- | --- |
| B66A | Nervous System Neoplasms W Radiotherapy |
| B66B | Nervous System Neoplasms W/O Radiotherapy W Catastrophic or Severe CC |
| D02B | Head and Neck Procedures W Malignancy or W Mod CC |
| D60A | Ear, Nose, Mouth and Throat Malignancy W Catastrophic or Severe CC |
| D60B | Ear, Nose, Mouth and Throat Malignancy W/O Catastrophic or Severe CC |
| E71A | Respiratory Neoplasms W Catastrophic CC |
| E71B | Respiratory Neoplasms W/O Catastrophic CC |
| G03A | Stomach, Oesophageal and Duodenal Procedures W Malignancy or W Cat CC |
| G07A | Appendicectomy W Malignancy or Peritonitis or W Catastrophic or Severe CC |
| G60A | Digestive Malignancy W Catastrophic CC |
| G60B | Digestive Malignancy W/O Catastrophic CC |
| H61A | Malignancy of Hepatobiliary System and Pancreas W Catastrophic CC |
| H61B | Malignancy of Hepatobiliary System and Pancreas W/O Catastrophic CC |
| I65A | Musculoskeletal Malignant Neoplasms W Radiotherapy or W Cat CC |
| I65B | Musculoskeletal Malignant Neoplasms W/O Radiotherapy W/O Cat CC |
| J62A | Malignant Breast Disorders |
| J62B | Malignant Breast Disorders, Sameday |
| J69A | Skin Malignancy W Catastrophic CC |
| J69B | Skin Malignancy W/O Catastrophic CC |
| J69C | Skin Malignancy, Sameday |
| L03A | Kidney, Ureter and Major Bladder Procedures for Neoplasm W Cat CC |
| L03B | Kidney, Ureter and Major Bladder Procedures for Neoplasm W Sev CC |
| L03C | Kidney, Ureter and Major Bladder Procedures for Neoplasm W/O Cat or Sev CC |
| L62A | Kidney and Urinary Tract Neoplasms W Catastrophic or Severe CC |
| L62B | Kidney and Urinary Tract Neoplasms W/O Catastrophic or Severe CC |
| M60A | Male Reproductive System Malignancy W Catastrophic or Severe CC |
| M60B | Male Reproductive System Malignancy W/O Catastrophic or Severe CC |
| N12A | Uterus and Adnexa Procedures for Malignancy W Catastrophic CC |
| N12B | Uterus and Adnexa Procedures for Malignancy W/O Catastrophic CC |
| N60A | Female Reproductive System Malignancy W Catastrophic CC |
| N60B | Female Reproductive System Malignancy W/O Catastrophic CC |
| R01A | Lymphoma and Leukaemia W Major OR Procedures W Catastrophic or Severe CC |
| R01B | Lymphoma and Leukaemia W Major OR Procedures W/O Catastrophic or Severe CC |
| R02A | Other Neoplastic Disorders W Major OR Procedures W Catastrophic CC |
| R02B | Other Neoplastic Disorders W Major OR Procedures W Severe or Moderate CC |
| R02C | Other Neoplastic Disorders W Major OR Procedures W/O CC |
| R03A | Lymphoma and Leukaemia W Other OR Procedures W Catastrophic or Severe CC |
| R03B | Lymphoma and Leukaemia W Other OR Procedures W/O Catastrophic or Severe CC |
| R03C | Lymphoma and Leukaemia W Other OR Procedures, Sameday |
| R04A | Other Neoplastic Disorders W Other OR Procedures W CC |
| R04B | Other Neoplastic Disorders W Other OR Procedures W/O CC |
| R60A | Acute Leukaemia W Catastrophic CC |
| R60B | Acute Leukaemia W/O Catastrophic CC |
| R61A | Lymphoma and Non-Acute Leukaemia W Catastrophic CC |
| R61B | Lymphoma and Non-Acute Leukaemia W/O Catastrophic CC |
| R62A | Other Neoplastic Disorders W CC |
| R62B | Other Neoplastic Disorders W/O CC |
| R63Z | Chemotherapy |
| R64Z | Radiotherapy |

Cancer-related diagnostic-related groups (AR-DRG) V8.0: Hospital separations from 1 July 2016

|  |  |
| --- | --- |
| DRG | DRG description |
| B66A | Nervous System Neoplasms, Major Complexity |
| B66B | Nervous System Neoplasms, Minor Complexity |
| D02B | Head and Neck Procedures, Intermediate Complexity |
| D60A | Ear, Nose, Mouth and Throat Malignancy, Major Complexity |
| D60B | Ear, Nose, Mouth and Throat Malignancy, Minor Complexity |
| E71A | Respiratory Neoplasms, Major Complexity |
| E71B | Respiratory Neoplasms, Minor Complexity |
| G03A | Stomach, Oesophageal and Duodenal Procedures, Major Complexity |
| G07A | Appendicectomy, Major Complexity |
| G60A | Digestive Malignancy, Major Complexity |
| G60B | Digestive Malignancy, Minor Complexity |
| H61A | Malignancy of Hepatobiliary System and Pancreas, Major Complexity |
| H61B | Malignancy of Hepatobiliary System and Pancreas, Minor Complexity |
| I65A | Musculoskeletal Malignant Neoplasms, Major Complexity |
| I65B | Musculoskeletal Malignant Neoplasms, Minor Complexity |
| J62A | Malignant Breast Disorders, Major Complexity |
| J62B | Malignant Breast Disorders, Minor Complexity |
| J69A | Skin Malignancy, Major Complexity |
| J69B | Skin Malignancy, Intermediate Complexity |
| J69C | Skin Malignancy, Minor Complexity |
| L03A | Kidney, Ureter and Major Bladder Procedures for Neoplasm, Major Complexity |
| L03B | Kidney, Ureter and Major Bladder Procedures for Neoplasm, Intermediate Comp |
| L03C | Kidney, Ureter and Major Bladder Procedures for Neoplasm, Minor Complexity |
| L62A | Kidney and Urinary Tract Neoplasms, Major Complexity |
| L62B | Kidney and Urinary Tract Neoplasms, Minor Complexity |
| M60A | Male Reproductive System Malignancy, Major Complexity |
| M60B | Male Reproductive System Malignancy, Minor Complexity |
| N12A | Uterus and Adnexa Procedures for Malignancy, Major Complexity |
| N12B | Uterus and Adnexa Procedures for Malignancy, Intermediate Complexity |
| N12C | Uterus and Adnexa Procedures for Malignancy, Minor Complexity |
| N60A | Female Reproductive System Malignancy, Major Complexity |
| N60B | Female Reproductive System Malignancy, Minor Complexity |
| R01A | Lymphoma and Leukaemia W Major OR Procedures, Major Complexity |
| R01B | Lymphoma and Leukaemia W Major OR Procedures, Minor Complexity |
| R02A | Other Neoplastic Disorders W Major OR Procedures, Major Complexity |
| R02B | Other Neoplastic Disorders W Major OR Procedures, Intermediate Complexity |
| R02C | Other Neoplastic Disorders W Major OR Procedures, Minor Complexity |
| R03A | Lymphoma and Leukaemia W Other OR Procedures, Major Complexity |
| R03B | Lymphoma and Leukaemia W Other OR Procedures, Intermediate Complexity |
| R03C | Lymphoma and Leukaemia W Other OR Procedures, Minor Complexity |
| R04A | Other Neoplastic Disorders W Other OR Procedures, Major Complexity |
| R04B | Other Neoplastic Disorders W Other OR Procedures, Minor Complexity |
| R60A | Acute Leukaemia, Major Complexity |
| R60B | Acute Leukaemia, Minor Complexity |
| R61A | Lymphoma and Non-Acute Leukaemia, Major Complexity |
| R61B | Lymphoma and Non-Acute Leukaemia, Minor Complexity |
| R62A | Other Neoplastic Disorders, Major Complexity |
| R62B | Other Neoplastic Disorders, Intermediate Complexity |
| R62C | Other Neoplastic Disorders, Minor Complexity |
| R63Z | Chemotherapy |
| R64Z | Radiotherapy |

# Outcome: Improve cancer outcomes

## Key result area 1: Decrease incidence of preventable cancers

### Indicator Incidence of preventable cancers

|  |  |
| --- | --- |
| Rationale | At least one in three cancers in Australia is attributable to exposure to 13 modifiable factors.[[2]](#footnote-2) Potentially more than half of all cancers could be avoided through a combination of healthy lifestyle and regular screening. Reducing the incidence of preventable cancers will substantially reduce the burden of disease due to cancer as well as health inequalities across the state. |
| Measure | **1.1: Incidence of preventable cancers** |
| Target | Halve the proportion of Victorians diagnosed with preventable cancers by 2040 from 2014 baseline |
| Definitions | Numerator: Number of new cancers of residents categorised as preventable and recorded as ICD-10 codes listed below, in the respective calendar year  **Cancer (ICD-10)**  Oral cavity & pharynx – (C00–C06, C09–C14)  All oesophagus – (C15)  Stomach – (C16)  Colorectum – (C18–C20)  Anus – (C21)  Liver – (C22)  Gall bladder – (C23)  Pancreas – (C25)  Larynx – (C32)  Lung – (C33, C34)  Melanoma – (C43)  Karposi sarcoma – (C46)  Female breast – (C50)  Vulva – (C51)  Vagina – (C52)  Cervix – (C53)  Endometrium – (C54, C55)  Ovary – (C56)  Penis – (C60)  Kidney & ureter – (C64–C66)  Bladder – (C67)  Hodgkin’s lymphoma – (C81)  Non-Hodgkin’s lymphoma – (C82–C85, C96)  Leukaemia – (C91–C95)  Denominator: Mid-year population estimate (Source: ABS)  Mode: Direct age-standardised rate per 100,000 population, standardised to the 2001 population of Australia |
| Data source | Baseline and future: VCR DHHS |
| Data availability | Baseline year: 2014  Available frequency: Annual |

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| Breakdown | Statewide data is available by age, sex, Aboriginal Victorians, culturally diversity , SEIFA IRSD, ARIA+ and by ICS and LGA. Data for Aboriginal Victorians can be reported annually, based on five-year rolling averages from a baseline of 2010–2014. Data available by request from Cancer Council Victoria (CCV). |
| Further information | Preventable cancers are cancers that are partly or wholly attributable to established casual factors that are able to be modified[[3]](#footnote-3).  Incidence reflects the number of primary tumours rather than the number of individuals with cancer. |

### Indicator Lifetime risk of cancer

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| --- | --- |
| Rationale | Lifetime risk of cancer is a measure used to estimate the risk of developing cancer up to a specified age. It considers the removal of people from the population of interest who have already been diagnosed with cancer. Lifetime risk is commonly expressed as a ‘1 in *n*’ proportion. |
| Measure | **1.2: Lifetime risk of cancer before the age of 85 years** |
| Target | Not set |
| Definition | Cumulative risk before the age of 85 years is calculated as:      Lifetime risk is interpreted as “1 in persons have a risk of cancer before the age of 85”.  “All cancers” is interpreted as all malignant tumours except non-melanoma skin cancers, basal and squamous cell carcinomas. Included in this definition are Myelodysplastic syndromes (MDS) and Myeloproliferative disorders (MPD) (D45-D47). |
| Data source | Baseline and future: VCR DHHS |
| Data availability | Baseline year: 2014  Available frequency: Annual |
| Breakdown | Statewide data is available by age, sex, Aboriginal Victorians, cultural diversity, SEIFA IRSD, ARIA+ and by ICS if case numbers permit (custom request to CCV) |
| Further information | Nil |

### Indicator Incidence of lung, colorectal, melanoma, breast, liver and cervix cancer

|  |  |
| --- | --- |
| Rationale | Based on the following criteria, the incidence of a number of specific cancers is included in the framework. The cancer:   * is moderately preventable – that is, about 50 per cent or more of the incidence is attributable to modifiable lifestyle and environmental factors * causes a substantial burden of disease – that is, the cancer is at least 5 per cent of incident cases of neoplasm. |
| Measures | **1.3: Incidence of lung cancer**  **1.4: Incidence of colorectal cancer**  **1.5: Incidence of melanoma**  **1.6: Incidence of female breast cancer**  **1.7: Incidence of cancer of the cervix**  **1.8: Incidence of liver cancer** |
| Target | Not set |
| Definitions | Numerator: Number of new cancers of specified ICD-10, diagnosed of residents and in the respective calendar year  Denominator: Mid-year population estimate (Source: ABS)  Mode: Direct age-standardised rate per 100,000 population, standardised to the 2001 population of Australia |
| Data source | Baseline and future: VCR DHHS |
| Data availability | Baseline year: 2014 or 2010–2014  Available frequency: Annual |
| Breakdown | Statewide data is available by age, sex, Aboriginal Victorians, culturally diversity , SEIFA IRSD, ARIA+ and by ICS and LGA if case numbers permit. LGA data not available for cervix or liver cancers. Data for Aboriginal Victorians and for some geographic areas can be reported annually, based on five-year rolling averages from a baseline of 2010–2014. Data available by custom request to CCV. |
| Further information | Measures 1.3, 1.4, 1.5, 1.6 and 1.7 are included in the National Healthcare Agreement, sourced from the Australian Cancer Database, and reported in the *Report on Government Services* (ROGS). |

## Key result area 2: Decrease deaths due to cancer

### Indicator Deaths due to cancer

|  |  |
| --- | --- |
| Rationale | Cancer was the largest cause of death in Victoria in 2016 and the largest cause of years of life lost in 2011.[[4]](#footnote-4) Premature death is nationally defined as deaths before the age of 75 years. |
| Measures | **2.1: Death rate due to cancer**  **2.2: Premature death rate due to cancer** |
| Target | **2.1:** Not set  **2.2:** 25 per cent decrease in premature deaths due to cancer by 2025 from 2011–12 baseline |
| Definitions | **Measure 2.1:**  Numerator: Number of deaths due to all cancers of residents, registered in the respective calendar year  Denominator: Mid-year population estimate (Source: ABS)  **Measure 2.2:**  Numerator: Number of deaths due to all cancers of residents before age of 75 years, registered in the respective calendar year  Denominator: Mid-year population estimate aged less than 75 years (Source: ABS)  **For all measures:**  Mode: Direct age-standardised rate per 100,000 population, standardised to the 2001 population of Australia |
| Data source | Baseline and future: VCR Mortality data |
| Data availability | Baseline year: 2010  Available frequency: Annual |
| Breakdown | Statewide data is available by age, sex, SEIFA IRSD, ARIA+ and by ICS and LGA if case numbers permit. Data for Aboriginal Victorians and some geographic areas may be available annually based on five-year rolling averages. Data is available on request to DHHS Centre for Victorian Data Linkage (CVDL) or the ABS. |
| Further information | Measure 2.2 is identical to Measure 1.1.2.2.E of the *Victorian public health and wellbeing outcomes framework*.  The framework has set a 25 per cent target for decreasing the age-standardised premature death rate due to cancer by 2025 from a 2010 baseline. The World Health Organization (WHO) has set the same target.  Measure 2.1 is also available from the VCR, where the residential address at the time of diagnosis is used as the residential address at the time of death. For many cancers the differences between VCR and ABS coding are minimal, but there are some sites where the differences are as high as 25 per cent.  At the time of the 2019 revision, Victorian Aboriginal and Torres Strait Islander status in VCR was likely to be incorrect for 2017 as the data had not been updated using information provided from the linked data.  The ATSI population file is a **projected population** not an **estimated population**. For 2010 and 2011, the population is the **estimated resident** population, and each subsequent year is projected from the 2011 estimated population.  Estimated resident population (ERP) for 2017 was not yet been finalised at the time of the revision. The ERP for 2016 and years prior were finalised. However, the result for 2017 may differ in future iterations of this report. |

### Indicator Lives saved

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| Rationale | Lives that were potentially lost due to cancer can be saved through preventing cancers, detecting cancers earlier, improving treatment and reducing unwarranted variations in outcomes. |
| Measure | **2.3: Number of deaths averted** |
| Target | 10,000 lives saved by 2025 |
| Definitions | 1. Lives saved are the cumulative number of deaths which did not occur had the baseline mortality rate continued between 2014 and 2025.[[5]](#footnote-5) 2. The expected number of deaths will be determined by applying the five-year age and sex-specific mortality rates of the baseline to the ABS-reported population. 3. The difference between observed deaths and expected deaths are the ‘lives saved’. |
| Data source | Baseline and future: VCR Mortality data |
| Data availability | Baseline year: 2010–2014  Available frequency: Annual |
| Breakdown | Statewide data is available. Data for calculation available by request to CVDL DHHS. |
| Further information | The number of deaths averted is based on the difference between observed and expected number of deaths.  Estimated resident population for 2017 has not yet been finalised. The ERP for 2016 and years prior has been finalised. The result for 2017 may differ in future iterations of this report.  The calculation used for this measure is as follows: |

## Key result area 3: Increase survivorship quality of life

### Indicator Long-term quality of life

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| Rationale | Increasing cancer incidence together with improved survival rates are contributing to the growing number of cancer survivors. Survivors may encounter a range of potential effects as a result of the cancer and its treatment. Improving quality of life post active therapy is fundamental to achieving cancer outcomes for Victorians. |
| Measure | **3.1: Quality of life post active therapy (TBD)** |
| Target | Not set |
| Further information | Nil |

# Outcome: Equitable outcomes for all Victorians

## Key result area 4: Equitably reduce cancer incidence

### Indicator Inequality of incidence of preventable cancers

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| Rationale | There are substantial inequalities in cancer incidence across populations and geographic areas of Victoria. Reporting of these measures will enable a focus on populations of disadvantage that exist everywhere, as well as parts of the state where the whole area has a comparatively higher incidence of preventable cancers. |
| Measures | **4.1:** **Rate ratio of preventable cancer incidence between Integrated Cancer Services**  **4.2: Rate ratio of preventable cancer incidence between socioeconomic disadvantage quintiles**  **4.3: Rate ratio of preventable cancer incidence between Aboriginal and non-Aboriginal Victorians** |
| Target | A target for the goal of ‘Equitable outcomes for all Victorians’ is not set. |
| Definitions | Measure 4.1:  Numerator: Rate of diagnosis with new cancers categorised as preventable for residents of each ICS except the area with the statistically lowest rate, in the respective calendar year  Denominator: Rate of diagnosis with new cancers categorised as preventable for residents of the ICS with the statistically lowest rate, in the respective calendar year  Measure 4.2:  Numerator: Rate of diagnosis with new cancers categorised as preventable for residents of each SEIFA IRSD quintile except the least disadvantaged quintile, in the respective calendar year  Denominator: Rate of diagnosis with new cancers categorised as preventable for residents of the least disadvantaged SEIFA IRSD quintile, in the respective calendar year  Measure 4.3:  Numerator: Rate of diagnosis with new cancers categorised as preventable for Aboriginal Victorians, in the respective calendar year  Denominator: Rate of diagnosis with new cancers categorised as preventable for non-Aboriginal Victorians, in the respective calendar year  For all measures:  Mode: Ratio of age-standardised rate per 100,000 population, standardised to the 2001 population of Australia |
| Data source | Baseline and future: VCR DHHS |
| Data availability | Measure 4.1:  Baseline year: 2014  Available frequency: Annual  Measure 4.2:  Baseline year: 2014  Available frequency: Annual  Measure 4.3:  Baseline years: 2014  Available frequency: Annual |
| Breakdown | **Measure 4.1:** Statewide data is available (custom request to CCV)  **Measure 4.2:** Statewide data is available by sex and by ICS (custom request to CCV)  **Measure 4.3:** Statewide data is available (custom request to CCV) |
| Further information | Preventable cancers are defined for Measure 1.1.  Equitable outcomes will have been achieved if the rate ratio for Measures 4.1, 4.2 and 4.3 is not statistically different from 1.  The following calculation was used: |

## Key result area 5: Equitably reduce cancer deaths

### Indicator Inequality of premature death due to cancer

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| Rationale | Premature death due to cancer is the outcome of multiple interdependent factors including risk of cancer, stage of detection, treatment and care. There are substantial inequalities in the premature cancer death rate across populations and geographic areas of Victoria. |
| Measures | **5.1: Rate ratio of premature death due to cancer between Integrated Cancer Services**  **5.2: Rate ratio of premature death due to cancer between socioeconomic disadvantage quintiles**  **5.3: Rate ratio of premature death due to cancer between Aboriginal and non-Aboriginal Victorians** |
| Target | A target for the goal of ‘Equitable outcomes for all Victorians’ is not set. |
| Definitions | Measure 5.1:  Numerator: Rate of deaths due to all cancers before age 75 years, for residents of each ICS except the area with the statistically lowest rate, registered in the respective calendar year  Denominator: Rate of deaths due to all cancers before age 75 years, for residents of the ICS with the statistically lowest rate, registered in the respective calendar year  Measure 5.2:  Numerator: Rate of deaths due to all cancers before age 75 years, for residents of each SEIFA IRSD quintile except the least disadvantaged quintile, registered in the respective calendar year  Denominator: Rate of deaths due to all cancers before age 75 years, for residents of the least disadvantaged SEIFS IRSD quintile, registered in the respective calendar year  Measure 5.3:  Numerator: Rate of deaths due to all cancers before age 75 years, for Aboriginal Victorians, registered in the respective calendar year  Denominator: Rate of deaths due to all cancers before age 75 years, for non-Aboriginal Victorians, registered in the respective calendar year  For all measures:  Mode: Ratio of age-standardised rate per 100,000 population, standardised to the 2001 population of Australia |
| Data source | Baseline and future: VCR Mortality data |

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| Data availability | Measure 5.1:  Baseline year: 2014  **Available frequency: Annual and may be based on rolling multiple-year averages**  Measure 5.2:  Baseline year: 2014  Available frequency: Annual  Measure 5.3:  Baseline years: 2014  Available frequency: Annual, based on rolling five-year averages |
| Breakdown | **Measure 5.1:** Statewide data is available (custom request to CVDL DHHS or ABS)  **Measure 5.2:** Statewide data is available by sex and by ICS (custom request to CVDL DHHS or ABS)  **Measure 5.3:** Statewide data is available (custom request to CVDL DHHS or ABS) |
| Further information | Equitable outcomes will have been achieved if the rate ratio for Measures 5.1, 5.2 and 5.3 is not statistically different from 1.  The following calculation was used: |

# Outcome: Prevent cancers

## Key result area 6: Decrease smoking and harmful alcohol consumption

### Indicator Smoking of adults and adolescents

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| Rationale | Tobacco smoking is the largest cause of preventable cancers, causing about 13 per cent of all cancers. There have been substantial gains in reducing smoking in Victoria. However, smoking remains a major cause of health inequalities throughout the state. |
| Measures | **6.1: Proportion of adults who smoke daily**  **6.2: Proportion of adolescents 12–17 years who currently smoke** |
| Target | **6.1:** Not set  **6.2:** 30 per cent decrease in smoking by adolescents by 2025 from 2014 baseline |
| Definitions | Measure 6.1:  Numerator: Number of adults aged 18 years or older who reported their current smoking status as ‘smoke daily’  Denominator: Total number of adults in survey with question responses, weighted to mid-year population estimate, aged 18 years or older (Source: ABS)  Mode: Proportion, age-standardised to the 2011 population of Victoria  Measure 6.2:  Numerator: Number of full-time school students aged 12–17 years who reported smoking in the past seven days  Denominator: Total number of students in survey with question responses, weighted to number of full-time school students, aged 12–17 years (Source: ABS)  Mode: Proportion |
| Data source | Measures 6.1:  Primary source  Baseline and future: VPHS DHHS  Secondary source  Baseline and future: AATSIHS ABS  Measure 6.2:  Baseline and future: Australian School Students Alcohol and Drug Survey (ASSAD) CCV |

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| Data availability | **Measure 6.1:**  **Primary source**  Baseline year: 2015  Available frequency: Annual and triennial, depending on breakdown  **Secondary source**  Baseline year: 2012–13  Available frequency: Every six years  **Measure 6.2:**  Baseline year: 2014  Available frequency: Triennial |
| Breakdown | Statewide data is available from VPHS by age, sex, household income, employment, education, culturally diversity, for adults with psychological distress and for adults with a chronic condition, and by metropolitan/rural and regions (custom request to DHHS). Data available triennially from VPHS by LGA (custom request to DHHS). Data may be available from VPHS triennially from 2017 onwards for Aboriginal Victorians if respondent numbers increase (custom request to System Intelligence and Analytics (SIA) DHHS).  Statewide data is available from AATSIHS, where respondents are aged 15 years or older, by Aboriginal Victorians and others and by age, sex and by metropolitan/rural (custom request to ABS).  Statewide data is available from ASSAD by age, sex, SEIFA IRSD and ARIA+ (custom request to CCV). |
| Further information | Measure 6.1 is similar to Measure 1.3.3.1.A of the *Victorian public health and wellbeing outcomes framework*. Measure 6.2 is similar to Measure 1.3.3.1.B of the framework.  National, state and territory rates available from National Drug Strategy Household Survey (NDSHS) Australian Institute of Health and Welfare (AIHW), National Health Survey (NHS) ABS and AATSIHS ABS. International rates are available for some years.  Measure 6.1 is included in the National Healthcare Agreement, sourced from the NHS, and reported in ROGS.  The Victorian public health and wellbeing outcomes framework has set a 30 per cent target for decreasing the prevalence of current smoking among adolescents aged 12–17 years by 2025 from a 2014 baseline is also set. WHO has set similar targets.  From 2015 onwards the VPHS used a dual sampling frame of landline and mobile phones to recruit respondents. The inclusion of mobile phone users was seen to be critical to improving the representativeness of the VPHS sample and reducing the potential for bias in the survey estimates. Using the 2015 VPHS as the baseline for Measure 6.1 is therefore appropriate.  Data for Measure 6.1 is also available from NDSHS AIHW (respondents 12 years or older), Smoking and Health survey CCV and from NHS ABS. Similar data for Measure 6.2 is also available from *About You* DET. |

### Indicator Alcohol consumption among adults and adolescents

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| Rationale | Excess alcohol consumption is responsible for about 3 per cent of preventable cancers.[[6]](#footnote-6) |
| Measures | **6.3: Proportion of adults who consume alcohol at lifetime risk of harm**  **6.4: Proportion of adolescents 12–17 years who consume alcohol at least monthly** |
| Target | **6.3:** 10 per cent decrease in excess alcohol consumption by adults by 2025 from 2014 baseline  **6.4:** 10 per cent decrease in excess alcohol consumption by adolescents by 2025 from 2014 baseline |
| Definitions | Measure 6.3:  Numerator: Number of adults aged 18 years or older adults who reported consuming alcohol at frequency and quantities that do not meet the [2009 NHMRC guidelines](https://www.nhmrc.gov.au/health-topics/alcohol-guidelines) <https://www.nhmrc.gov.au/health-topics/alcohol-guidelines> to reduce the risk of alcohol-related harm over a lifetime  Denominator: Total number of adults in survey with question responses, weighted to mid-year population estimate, aged 18 years or older (Source: ABS)  Mode: Proportion, age-standardised to the 2011 population of Victoria  Measure 6.4:  Numerator: Number of full-time school students aged 12–17 years who reported drinking alcohol in the past month  Denominator: Total number of students in survey with question responses, weighted to number of full-time school students, aged 12–17 years (Source: ABS)  Mode: Proportion |
| Data sources | Measures 6.3:  Primary source  Baseline and future: VPHS DHHS  Secondary source  Baseline and future: AATSIHS ABS  Measure 6.4:  Baseline and future: ASSAD CCV |

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| Data availability | **Measure 6.3:**  **Primary source**  Baseline year: 2014  Available frequency: Annual and triennial, dependent on breakdown  **Secondary source**  Baseline year: 2012–13  Available frequency*:* Six-yearly  **Measure 6.4:**  Baseline year: 2014  Available frequency: Triennial |
| Breakdown | Statewide data is available annually from the VPHS for the state by age, sex, household income, employment, education, culturally diversity, for adults with psychological distress and for adults with a chronic condition, and by metropolitan/rural and regions. Data available triennially from VPHS by LGA. Data may be available from VPHS triennially from 2017 onwards for Aboriginal Victorians if respondent numbers increase.  Statewide data is available from AATSIHS, where respondents are aged 15 years or older, by Aboriginal Victorians and others and by age and sex and by metropolitan/rural (custom request to ABS).  Statewide data is available from ASSAD for the state by age, sex, SEIFA IRSD and ARIA+ (custom request to CCV). |
| Further information | Measure 6.3 is identical to Measure 1.3.4.1A of the *Victorian public health and wellbeing outcomes framework*. Measure 6.4 is similar to Measure 1.3.4.1.C of the framework.  The Victorian public health and wellbeing outcomes frameworkhas set a 10 per cent target for decreasing the age-standardised prevalence of lifetime risk of harm and for risk of alcohol-related injury on a single occasion at least monthly among adults aged 18 years or older by 2025 from a 2011–12 baseline. A 10 per cent target for decreasing the prevalence of monthly alcohol consumption among adolescents aged 12–17 years by 2025 from a 2014 baseline is also set. WHO has set similar targets.  From 2015 onwards the VPHS used a dual sampling frame of landline and mobile phones to recruit respondents. The inclusion of mobile phone users was seen to be critical to improving the representativeness of the VPHS sample and reducing the potential for bias in the survey estimates. This may affect the appropriateness of using the 2011–12 VPHS as a baseline for this measure.  Data for Measure 6.3 is also available from NDSHS AIHW and NHS ABS. Similar data for Measure 6.4 is also available from *About You* DET. |

## Key result area 7: Increase healthier eating and active living

### Indicator Fruit and vegetable consumption of adults, adolescents and children

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| Rationale | Eating a healthy, balanced diet is necessary to maintaining a healthy weight. Keeping a healthy weight is important for cancer prevention, because obesity is the third biggest cause of cancer after smoking and ultraviolet radiation (UVR). Diet can also directly affect cancer risk. Some foods, such as fruits, vegetables and foods high in fibre, can reduce the risk of cancer. Insufficient consumption of fruit and vegetables is estimated to causes up to two per cent of preventable cancers.[[7]](#footnote-7) Monitoring of the mean number or proportion of serves of fruit and vegetables consumed enables assessment of progress towards meeting the [2013 *Australian dietary guidelines*](https://www.nhmrc.gov.au/guidelines-publications/n55) <https://www.nhmrc.gov.au/guidelines-publications/n55>. |
| Measures | **7.1: Mean daily serves of fruit in adults**  **7.2: Proportion of adolescents 10-17 years who eat the minimum daily recommended serves of fruit**  **7.3: Proportion of children 4-12 years who eat the minimum daily recommended serves of fruit**  **7.4: Mean daily serves of vegetables in adults**  **7.5: Proportion of adolescents 10-17 years who eat the minimum daily recommended serves of vegetables**  **7.6: Proportion of children 4–12 years who eat the minimum daily recommended serves of vegetables** |
| Target | Not set |
| Definitions | Measure 7.1:  Mean number of daily serves of fruit usually consumed each day as reported by adults aged 18 years or older, where a serve of fruit is one medium piece or two small pieces of fruit or one cup of diced pieces (clarification if requested by respondent –excludes fruit juice). Number of serves per day is derived from reporting serves consumed per day (Instrument: NHS)  Measure 7.2:  Proportion of daily serves of fruit usually consumed a day as reported by adolescents in Years 5, 8 and 11, where a serve of fruit is equal to one piece of fruit, such as an apple or pear, one small packet of dried fruit, like sultanas, or one cup of diced or canned fruit. Number of serves per day is derived from reporting serves consumed per day (Scale: none, 1, 2, 3, 4, 5 or more) (Instrument: Question developed in consultation with DHHS)  Measure 7.3:  Proportion of daily serves of fruit consumed each day by children aged 4–12 years as reported by parent/guardian, where ‘a serve is one small piece of fruit or half a cup of diced pieces. This also includes dried fruit – equivalent to half a tablespoon’ (NSW Centre for Public Health Nutrition). Number of serves per day is derived from reporting serves consumed per day or per week, allowing for decimal points of a serve (Instrument: NSW Centre for Public Health Nutrition)  Measure 7.4:  Mean number of daily serves of vegetables usually consumed each day as reported by adults aged 18 years or older, where a serve of vegetables is ½ cup of cooked vegetables or one cup of salad vegetables (clarification if requested by respondent –includes potatoes, hot potato chips, but excludes potato crisps and vegetable juice). Number of serves per day is derived from reporting serves consumed per day (Instrument: NHS)  Measure 7.5:  Proportion of daily serves of vegetables usually consumed a day as reported by adolescents in Years 5, 8 and 11, where a serve of vegetables is equal to ½ a cup of cooked vegetables or legumes, one cup of salad or one medium potato. Number of serves is derived from reporting serves consumed per day (Scale: none, 1, 2, 3, 4, 5 or more) (Instrument: Question developed in consultation with DHHS)  Measure 7.6:  Proportion of daily serves of vegetables consumed each day by children aged 4–12 years as reported by parent/guardian, where ‘a serve is a quarter of a cup of cooked vegetables or half a cup of salad vegetables’. Number of serves per day is derived from reporting serves consumed per day or per week, allowing for decimal points of a serve (Instrument: NSW Centre for Public Health Nutrition) |
| Data sources | Measures 7.1 and 7.4:  Primary source  Baseline and future: NHS ABS  Secondary source  Baseline and future: AATSIHS ABS  Measures 7.2 and 7.5:  Baseline and future: About You DET  Measures 7.3 and 7.6:  Baseline and future: VCHWS DET |

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| Data availability | Measures 7.1 and 7.4:  Primary source  Baseline year: 2011–12  Available frequency: Triennial (NHS)  Secondary source  Baseline year: 2012–13  Available frequency: Every six years  Measures 7.2 and 7.5:  Baseline year: 2014  Available frequency: Biennial  Measures 7.3 and 7.6:  Baseline year: 2013  Available frequency: Triennial |
| Breakdown | Statewide data is available triennially from NHS by age, sex, SEIFA IRSD and ARIA+.  Statewide data is available from AATSIHS where respondents are aged 15 years or older, for the state by Aboriginal Victorians and others, and by age, sex and metropolitan/rural (custom request to ABS).  Statewide data is available from About You by year level, sex, Aboriginal Victorians, family type, LBOTE, and by metropolitan/rural and regions (custom request to DET).  Statewide data is available from VCHWS by age, sex, family type, Aboriginal Victorians, SEIFA IRSD and by metropolitan/rural and regions (custom request to DET). |
| Further information | Measure 7.1 is identical to Measure 1.3.2.1A of Victorian public health and wellbeing outcomes framework*.* Measure 7.2 is identical to Measure 1.3.4.1.B of the framework, as is Measure 7.3 with Measure 1.3.4.1.C, Measure 7.4 with Measure 1.3.4.1.D, Measure 7.5 with Measure 1.3.4.1.E and Measure 7.6 with Measure 1.3.4.1.F of the framework.  National, state and territory rates available triennially from NHS. International rates available for some years.  From 2015 onwards the VPHS used a dual sampling frame of landline and mobile phones to recruit respondents. The inclusion of mobile phone users was seen to be critical to improving the representativeness of the VPHS sample and reducing the potential for bias in the survey estimates. This may affect the appropriateness of using the 2011–12 VPHS as a baseline for this measure.  From 2016 the VCHWS may use a dual sampling frame of landline and mobile phones to recruit respondents. This may affect the appropriateness of using  the 2013 VCHWS as a baseline for this measure, particularly for some population groups.  Data for Measures 7.2 and 7.5 are also available from NHS ABS and National Secondary Students’ Diet and Activity Survey (NaSSDA) CCV. Data for Measures 7.3 and 7.6 is also available from NHS ABS. |

### Indicator Red meat and processed meat consumption

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| Rationale | There is strong evidence that eating lots of processed and red meat can increase the risk of colorectal cancer and possibly stomach and pancreatic cancers. Excess consumption of red meat and processed meat is estimated to cause about 2 per cent of preventable cancers.[[8]](#footnote-8) The [2013 *Australian dietary guidelines*](https://www.nhmrc.gov.au/guidelines-publications/n55) <https://www.nhmrc.gov.au/guidelines-publications/n55> recommend to reduce some of the health risks associated with consuming meat, up to a maximum of 455 g per week (one serve per day) of lean meat is recommended for Australian adults. Processed and cured meats are discretionary and consumption should be very little if any. |
| Measures | **7.7: Mean number of times per week that adults eat red meat**  **7.8: Mean number of times per week that adults eat processed meat** |
| Target | Not set |
| Definitions | Measure 7.7:  Mean number of times per week that red meat is usually consumed, as reported by adults aged 18 years or older (consumption of any cut of red meat such as beef, lamb, mutton and goat including steaks, chops, mince, stir fries and casseroles, but not pork). Number of times per week is derived from reported times consumed (Instrument: NaSSDA)  Measure 7.8:  Mean number of times per week that processed meat is usually consumed, as reported by adults aged 18 years or older (processed red meats such as bacon, ham, salami, devon, strasburg, and other processed deli meats, canned hams, dried red meats, sausages, chorizo, rissoles/processed hamburgers, frankfurts, saveloys, kabana and meat pies/sausage rolls). Number of times per week is derived from reported times consumed (Instrument: NaSSDA) |
| Data source | TBD |
| Data availability | TBD |
| Breakdown | TBD |
| Further information | NaSSDA questions have been validated for use in adults by the National Food and Nutrition Monitoring and Surveillance Project 2001 and used in the more recent *45 and Up Study* of Australian adults by the Sax Institute. The questions are suitable for inclusion in computer assisted telephone interview surveys.  The ABS Australian Health Survey – National Nutrition and Physical Activity Survey (NNPAS) assessed dietary consumption of red and processed meat using 24-hour food recall surveys. In 2011–12, Australian adults consumed an average 565 g per week of all red meat (including discretionary-higher fat and processed varieties) –– 24 per cent higher on average than maximum suggested by the Australian Dietary Guidelines.  Measured dietary intake surveys such as the NNPAS provide the best quantitative measure of dietary intake of red and processed meats. |

### Indicator Physical activity of adults, adolescents and children

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| Rationale | There is substantial evidence that higher levels of physical activity are linked to lower risk of several cancers including colorectal, breast and endometrial cancers. For a number of other cancers there is more limited evidence of a relationship with physical activity. Current levels of physical activity have been attributed to increasing sedentariness of domestic and occupational activities, insufficient physical activity during leisure time, increasing use of passive modes of transport and increased urbanisation. |
| Measures | **7.9: Proportion of adults who are sufficiently physically active**  **7.10: Proportion of adolescents 10–17 years who are sufficiently physically active**  **7.11: Proportion of children 5–12 years who are sufficiently physically active** |
| Target | **7.9: Not set**  **7.10: 20 per cent increase in sufficient physical activity prevalence of adolescents by 2025 from 2014 baseline**  **7.11: Not set** |
| Definitions | Measure 7.9:  Numerator: Number of adults aged 18–64 years who reported undertaking sufficient physical activity, at least 150 minutes of moderate intensity physical activity or at least 75 minutes of vigorous intensity physical activity over at least five sessions each week, and number of adults aged 65 years or older who reported undertaking at least 30 minutes of physical activity each day, as described in the [2014 *Australia’s physical activity and sedentary behaviour guidelines*](http://www.health.gov.au/internet/main/publishing.nsf/content/health-pubhlth-strateg-phys-act-guidelines) <http://www.health.gov.au/internet/main/publishing.nsf/content/health-pubhlth-strateg-phys-act-guidelines> (Instrument: Active Australia Survey)  Denominator: Total number of adults in survey with question responses, weighted to mid-year population estimate, aged 18 years or older (Source: ABS)  Mode: Proportion, age-standardised to the 2011 population of Victoria  Measure 7.10:  Numerator: Number of adolescents in Years 5, 8 and 11 who reported undertaking an accumulated minimum of 60 minutes of moderate to vigorous intensity physical activity every day, as described in the 2014 *Australia’s physical activity and sedentary behaviour guidelines* (Instrument: Healthy Behaviour in School-age Children)  Denominator: Total number of adolescents in survey with question responses, weighted to school enrolments in Years 5, 8 and 11  Mode: Proportion  Measure 7.11:  Numerator: Number of children aged 5–12 years who were reported by a parent/guardian to undertake an accumulated minimum of 60 minutes of moderate to vigorous intensity physical activity every day, as described in the 2014 *Australia’s physical activity and sedentary behaviour guidelines* (Instrument: Questions created in consultation with DHHS)  Denominator: Total number of respondents in survey with question responses, weighted to mid-year population estimate, aged 5–12 years (Source: ABS)  Mode: Proportion |
| Data sources | Measure 7.9:  Baseline and future: VPHS DHHS  Measure 7.10:  Baseline and future: About You DET  Measure 7.11:  Baseline and future: VCHWS |
| Data availability | Measure 7.9:  Baseline year: 2015  Available frequency: Annual and triennial, depending on breakdown  Measure 7.10:  Baseline year: 2014  Available frequency: Biennial  Measure 7.11:  Baseline year: 2013  Available frequency: Triennial |
| Breakdown | Statewide data is available annually from the VPHS by age, sex, household income, employment, education, culturally diversity, for adults with psychological distress and for adults with a chronic condition, and by metropolitan/rural and regions. Data available triennially from VPHS by LGA. Data may be available from VPHS triennially from 2017 onwards for Aboriginal Victorians, if respondent numbers increase. Data is available through a custom request to SIA DHHS.  Statewide data is available from About You by year level, sex, Aboriginal Victorians, family type, LBOTE and by metropolitan/rural and regions (custom request to DET).  Statewide data is available from VCHWS by age, sex, family type, Aboriginal Victorians, SEIFA IRSD and by metropolitan/rural and regions (custom request to DET). |
| Further information | Measure 7.9 is similar to Measure 1.3.1.6.A of the *Victorian public health and wellbeing outcomes framework*. Measure 7.10 is identical to Measure 1.3.1.6.B, as is Measure 7.11 to Measure 1.3.1.6.C of the framework.  National, state and territory rates available triennially from NHS for each measure and from NaSSDA for Measure1.3.1.6.B. International rates are not available due to lack of comparability.  Measure 7.10 included in the DET outcomes framework for school-aged children, sourced from About You DET.  The Victorian public health and wellbeing outcomes frameworkhas set a 10 per cent target for increasing the age-standardised prevalence of sufficient physically active among adults aged 18 years or older by 2025 from a 2011–12 baseline, however a baseline year of 2015 is used for Measure 7.9 because of the change in sampling methodology of the VPHS . It has also set a 20 per cent target for increasing the prevalence of sufficient physical activity among adolescents aged 12–17 years by 2025 from a 2014 baseline. The target for adolescents is an Education State Target. WHO has set a similar target for adults.  From 2015 onwards the VPHS used a dual sampling frame of landline and mobile phones to recruit respondents. The inclusion of mobile phone users was seen to be critical to improving the representativeness of the VPHS sample and reducing the potential for bias in the survey estimates. Using the 2015 VPHS as the baseline for Measure 7.9 is therefore appropriate. From 2016 the VCHWS may use a dual sampling frame of landline and mobile phones to recruit respondents. This may affect the appropriateness of using  the 2013 VCHWS as a baseline for this measure, particularly for some population groups.  Data for Measures 7.9, 7.10 and 7.11 is also available from NHS ABS. Data for Measure 7.10 is also available from NaSSDA CCV. |

## Key result area 8: Decrease obesity

### Indicator Overweight and obesity of adults, adolescents and children

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| Rationale | Excess weight is the third largest cause of preventable cancers in Australia after smoking and UVR.[[9]](#footnote-9) Extra fat in the body can have harmful effects such as producing hormones and growth factors that affect the way cells work. This can raise the risk of several diseases including cancer. Many types of cancers are more common in people who are overweight or obese, including cancer of the breast (in women after menopause), bowel, womb, oesophagus, pancreas, kidney, upper stomach, gallbladder, ovary and thyroid, as well as myeloma and meningioma. |
| Measures | **8.1: Proportion of adults who are overweight or obese (measured)**  **8.2: Proportion of adults who are overweight or obese (self-report)**  **8.3 Proportion of children 5–17 years who are overweight or obese (measured)** |
| Target | **8.1:** 5 per cent decrease in prevalence of overweight and obesity of adults by 2025 from 2011–12 baseline  **8.2:** Not set  **8.3:** 5 per cent decrease in prevalence of overweight and obesity of children by 2025 from 2011–12 baseline |
| Definitions | Measure 8.1:  Numerator: Number of adults aged 18 years or older whose body mass index (BMI), based on measured height and weight, were greater than or equal to 25.00  *Denominator:* Total number of adults in survey aged 18 years or older with measured height and weight, weighted to mid-year population estimate, aged as identified in the measure (Source: ABS)  *Mode:* Proportion, direct age-standardised to the 2001 population of Australia  Measure 8.2:  Numerator: Number of adults aged 18 years or older whose BMI, based on self-reported height and weight, was greater than or equal to 25.00 (Instrument: NHS)  *Denominator:* Total number of adults in survey with self-reported height and weight, weighted to mid-year population estimate, aged 18 years or older (Source: ABS)  *Mode:* Proportion, direct age-standardised to the 2011 population of Victoria  Measure 8.3:  Numerator: Number of children aged 5–17 years whose BMI (appropriate for age and sex), based on measured height and weight, is likely to be greater than or equal to 25.00 at age 18 years, based on centile curves (as defined by International Obesity Task Force)  Denominator: Total number of children in survey with measured height and weight, weighted to mid-year population estimate, aged 5–17 years (Source: ABS)  Mode: Proportion |

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| Data sources | Measure 8.1:  Primary source  Baseline and future: NHS ABS  Secondary source  Baseline and future: AATSIHS ABS  Measure 8.2:  Baseline and future: VPHS DHHS  Measure 8.3:  Baseline and future: NHS ABS  Secondary source  Baseline and future: AATSIHS ABS |
| Data availability | Measure 8.1:  Primary source  Baseline year: 2011–12  Available frequency: Triennial  Secondary source  Baseline year: 2012–13  Available frequency: Every six years  Measure 8.2:  Baseline year: 2015  Available frequency: Annual and triennial, dependent on breakdown  Measure 8.3:  Baseline year: 2011–12  Available frequency: Triennial  Secondary source  Baseline year: 2012–13  Available frequency: Every six years |
| Breakdown | Statewide data is available triennially from NHS by age, sex, SEIFA IRSD and ARIA+.  Statewide data is available annually from VPHS by age, sex, household income, employment, education, culturally diversity, for adults with psychological distress and for adults with a chronic condition, and by metropolitan/rural and regions. Data available triennially from VPHS by LGA. Data may be available from VPHS triennially from 2017 onwards for Aboriginal Victorians, if respondent numbers increase.  Statewide data is available every six years from AATSIHS, where respondents are aged 15 years or older, for the state by Aboriginal Victorians and others and by age, sex and by metropolitan/rural (custom request to ABS).  Data for Measure 8.3 is also available from *About You* DET. |

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| Further information | Measure 8.1 is identical to Measure 1.3.2.1.A of the *Victorian public health and wellbeing outcomes framework*. Measure 8.2 is similar to Measure 1.3.2.1.B, as is Measure 8.3 to Measure 1.3.2.1.E of the framework.  National, state and territory rates available triennially from NHS. International rates available for some years.  Measures 8.1 and 8.3 are included in the National Healthcare Agreement, sourced from the NHS, and reported in ROGS.  Self-reported overweight and obesity prevalence is known to underestimate the true prevalence, particularly for obesity. In 2011–12 self-reported overweight prevalence was similar to measured prevalence; in contrast, self-reported obesity prevalence was eight percentage points lower than measured prevalence.  The Victorian public health and wellbeing outcomes frameworkhas set a 5 per cent target for decreasing the age-standardised prevalence of overweight and obesity (measured) among adults aged 18 years or older and among children aged 5–17 years by 2025 from a 2011–12 baseline. WHO has set targets to halt the rise in overweight and obesity in adults and children by 2025 from a 2010 baseline.  From 2015 onwards the VPHS used a dual sampling frame of landline and mobile phones to recruit respondents. The inclusion of mobile phone users was seen to be critical to improving the representativeness of the VPHS sample and reducing the potential for bias in the survey estimates. Using the 2015 VPHS as the baseline for Measure 8.2 is therefore appropriate. |

## Key result area 9: Decrease UV exposure

### Indicator Sunburn incidence of adults

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| Rationale | UVR, whether from the sun or a UVR-emitting device, is carcinogenic and exposure can cause melanoma and cancers of the outermost layers of the skin (non-melanocytic skin cancers). Australia has one of the highest skin cancer rates in the world. Treatment of non-melanocytic skin cancers poses a significant public health burden, resulting in more hospital admissions than any other cancer type. Reducing people’s exposure to UVR is the primary strategy for skin cancer prevention. Sunburn is a marker of over-exposure to UVR accounting for skin type, and is associated with increased risk of melanoma. |
| Measure | **9.1: Proportion of 18–69 year olds who report getting sunburnt on the weekend** |
| Target | Not set |
| Definitions | Numerator: Number of adults aged 18–69 years who reported getting sunburnt on the previous summer weekend (Instrument: National and Victorian Sun Protection Surveys)  Denominator: Total number of adults in survey with question responses, weighted to Australian mid-year population estimate, aged 18–69 years (Source: ABS)  Mode: Proportion |
| Data source | Baseline and future: National Sun Protection Survey CCV |
| Data availability | Baseline year: 2013–14  Available frequency: About triennial |
| Breakdown | Statewide data is available by age, sex and SEIFA IRSD, and by skin type. Skin type is assessed by asking how the skin would react after exposure for 30 minutes ‘to strong sunshine at the beginning of summer with no protection at all’ – categories of highly sensitive, moderately sensitive and not sensitive. Data available through custom request to CCV. |
| Further information | National, state and territory figures are available from the National Sun Protection Survey. |

### Indicator Sun protection behaviours of adults

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| Rationale | For sun protection, there are five best practice sun protection behaviours recommended to reduce exposure to UVR. These are: to seek shade; wear sun protective clothing that covers as much of the body as possible; put on a broad brimmed hat that shades face, neck and ears; wear wraparound sunglasses; and apply SP30+ or above broad-spectrum water-resistant sunscreen every two hours. |
| Measure | **9.2: Proportion of 18–69 year olds wearing a combination of hats and/or sunscreen with one other key sun protective behaviour** |
| Target | Not set |
| Definitions | Numerator: Number of adults aged 18–69 who spent longer than 15 minutes outdoors in peak UVR periods, reported wearing a hat or sunscreen (SPF15+ or higher) and one other sun protective behaviour: stayed under shade; wore three-quarter or long-sleeved top; wore three-quarter or long leg cover; wore sunglasses (Instrument: National and Victorian Sun Protection Surveys)  Denominator: Total number of adults in survey with question responses, weighted to Australian mid-year population estimate, aged 18–69 years (Source: ABS)  Mode: Proportion |
| Data source | Baseline and future: National Sun Protection Survey CCV |
| Data availability | Baseline year: 2013–14  Available frequency: About triennial |
| Breakdown | Statewide data is available by age, sex and SEIFA IRSD, and by skin type (custom request to CCV). |
| Further information | National, state and territory figures are available from the National Sun Protection Survey. |

## Key result area 10: Decrease HPV and viral hepatitis impact

### Indicator Fully vaccinated against HPV

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| Rationale | Human papillomaviruses (HPV) are the major cause of cervical cancer in women. Genital warts and some cancers in males are related to HPV, including most anal cancer, and some cancers of the penis, head and neck. The HPV vaccine triggers the formation of antibodies to produce immunity, thus protecting the body from disease. |
| Measure | **10.1:** **Proportion of adolescents 15 years of age fully vaccinated against HPV** |
| Target | Not set |
| Definitions | Numerator: Number of adolescents turning 15 years of age who have received three doses of HPV vaccine which were reported to the National HPV Register  Denominator: Number of adolescents turning 15 years of age, from mid-year population estimate (Source: ABS)  Mode: Proportion |
| Data source | Baseline and future: National HPV Register |
| Data availability | Baseline year: 2013  Available frequency: Annual |
| Breakdown | Statewide data is available by sex and by LGA (custom request to Health Protection Branch DHHS). |
| Further information | Measure 10.1 is identical to Measure 1.3.5.2 of the *Victorian public health and wellbeing outcomes framework.*  National, state and territory comparisons available annually from National HPV register.  The HPV vaccine and vaccination schedule may change in the future, which will require amendments to the measure definition. |

### Indicator Notifications of viral hepatitis

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| Rationale | Infection with viral hepatitis (hepatitis B and hepatitis C) is preventable. People who are infected with hepatitis B or hepatitis C may develop a chronic infection that can lead to cirrhosis. The damage that results increases the risk of liver cancer. About 40 per cent of liver cancer cases in Victoria can be linked in chronic hepatitis C infections and 20 per cent linked to chronic hepatitis B infections.[[10]](#footnote-10) In contrast with most other cancers in Victoria, liver cancer incidence is increasing at a rapid rate, and deaths due to liver cancer are increasing faster than for any other type of cancer. |
| Measures | **10.2**: **Notification rate of unspecified hepatitis B**  **10.3: Notification rate of unspecified hepatitis C** |
| Target | Not set |
| Definitions | Measure 10.2:  Numerator: Number of notified cases of unspecified hepatitis B  *Denominator:* Mid-year population estimate (Source: ABS)  *Mode:* Rate per 100,000 population  Measure 10.3:  Numerator: Number of notified cases of unspecified hepatitis C  *Denominator:* Mid-year population estimate (Source: ABS)  *Mode:* Rate per 100,000 population |
| Data source | Baseline and future: PHESS DHHS |
| Data availability | Baseline year: 2014  Available frequency: Annual |
| Breakdown | Statewide data is available by age and sex, and by ICS (custom request to Health Protection Branch DHHS). |
| Further information | Diagnosis of hepatitis B and hepatitis C is notifiable in Australia.  Hepatitis B and hepatitis C are classified into two categories: newly acquired and unspecified. Newly acquired hepatitis B and hepatitis C is defined as infection acquired within 24 months prior to diagnosis. Unspecified hepatitis B and hepatitis C is defined as an infection acquired more than 24 months prior to diagnosis or unknown duration. Unspecified hepatitis B and hepatitis C is generally a chronic infection.  Notification rates derived from routine surveillance represent cases diagnosed by laboratory testing and reported to DHHS and are not necessarily representative of the underlying burden of disease. In the case of chronic hepatitis B and hepatitis C, notifications largely represent diagnosis of existing undiagnosed cases, and therefore can be an indication of improved awareness and health care access. Improving diagnosis of hepatitis B and hepatitis C is essential to reducing the burden of liver cancer through engaging those living with viral hepatitis in monitoring and treatment.  National, state and territory rates are available from the [National Notifiable Diseases Surveillance System](http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-surveil-nndss-nndssintro.htm). |

### Indicator Late-stage diagnosis of viral hepatitis

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| Rationale | Late diagnosis of viral hepatitis (hepatitis B or hepatitis C) increases the risk of adverse outcomes including cirrhosis and liver cancer. Progression to cirrhosis and/or liver cancer is preventable in most individuals through timely diagnosis and access to treatment and care, including newly available all-oral curative therapy for hepatitis C, and effective long-term antiviral therapy for hepatitis B. Improving timely diagnosis of chronic viral hepatitis is essential to reduce the burden of attributable cancer incidence and mortality. |
| Measures | **10.4: Proportion of people with hepatitis B diagnosed with liver cancer, whose hepatitis B was diagnosed late**  **10.5: Proportion of people with hepatitis C diagnosed with liver cancer, whose hepatitis C was diagnosed late** |
| Target | Not set |
| Definitions | Measure 10.4:  Numerator: Number of people notified with hepatitis B who were diagnosed with new liver cancer in the respective calendar year, who were diagnosed with hepatitis B in the two years before, at the same time as or after liver cancer diagnosis  *Denominator:* Number of people notified with hepatitis B who were diagnosed with new liver cancer in the respective calendar year  Measure 10.5:  Numerator: Number of people notified with hepatitis C who were diagnosed with new liver cancer in the respective calendar year, who were diagnosed with hepatitis C in the two years before, at the same time as or after liver cancer diagnosis  *Denominator:* Number of people notified with hepatitis C who were diagnosed with new liver cancer in the respective calendar year  **Both measures:**  *Mode:* Proportion |
| Data sources | Baseline and future:  *Numerator:* Linked PHESS DHHS and VCR CCV  *Denominator:* VCR CCV |
| Data availability | Baseline year: 2014  Available frequency: Annual |
| Breakdown | Statewide data is available (custom request to Health Protection Branch DHHS). |
| Further information | Notification rates are derived from routine surveillance represent cases diagnosed by laboratory testing and reported to DHHS and are not necessarily representative of the underlying burden of disease. Thus, the measures of late-stage diagnosis of viral hepatitis using PHESS DHHS as the source of diagnostic data will underestimate the true extent of liver cancer preventable by earlier diagnosis of hepatitis B or hepatitis C.  Hepatitis B and hepatitis C became notifiable conditions in Victoria in 1991. Linkage of PHESS and VCR will be undertaken using all records from PHESS. |

# Outcome: Detect cancers early

## Key result area 11: Increase early-stage diagnosis

### Indicator Cancers diagnosed at stage 1 and 2

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| Rationale | Diagnosis at an early stage of the cancer’s development leads to dramatically improved survival chances. Differences in stage are believed to be one of the main drivers of disparities in cancer survival between and within regions and population groups. |
| Measure | **11.1: Proportion of all cancers diagnosed at stages 1 and 2** |
| Target | Not set |
| Definition | Numerator: Number of new cancers diagnosed of residents at registry-derived (RD) stage 1 or 2 for the specific cancer sites, registered in the respective calendar year  Denominator: Number of cancers diagnosed for which RD stage is available  Mode: Proportion |
| Data source | VCR DHHS |
| Data availability | Baseline years: 2014 or 2010–2014  Available frequency: Annual |
| Breakdown | Statewide data is available by age, sex, culturally diversity, Aboriginal Victorians, SEIFA IRSD, ARIA+ and by ICS if case numbers permit. Data may be reported by five-year rolling averages. Data for Aboriginal Victorians may be reported annually based on five-year rolling averages if case numbers permit. Data available by custom request to CCV. |
| Further information | RD stage is the nationally agreed method of categorising cancer stages at diagnosis for population reporting. RD stage differs from the stage of diagnosis used for clinical managements of cancers. Stage at diagnosis is poorly recorded in patient records. RD stage is only available for breast, colorectal and prostate cancers. It is expected that RD stage will be available for additional cancers in future.  In Victoria derivation of RD stage using the business rules was achievable for a very high proportion (86–96 per cent) of four of the five tumour types tested.[[11]](#footnote-11) |

### Indicator Breast, colorectal, cervical and lung cancers diagnosed at stages 1 or 2

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| Rationale | Based on the following criteria, the proportion of specific cancers diagnosed at RD stages 1 and 2 is included in the framework. The criteria are:   * a population screening program is in place in Victoria, or * a large burden of disease with few cancers detected at the early stage and specific developments are in place to try to improve early detection. |
| Measures | **11.2: Proportion of female breast cancers diagnosed at stages 1 or 2**  **11.3: Proportion of colorectal cancers diagnosed at stages 1 or 2**  **11.4: Proportion of cervical cancers diagnosed at stages 1 or 2**  **11.5: Proportion of lung cancers diagnosed at stages 1 or 2** |
| Target | Not set |
| Definitions | Numerator: Number of new cancers of residents diagnosed at RD stage 1 or 2 for the specific cancer site  Denominator: Number of new cancers diagnosed for which RD stage is available  Mode: Proportion |
| Data source | VCR DHHS |
| Data availability | Baseline years: 2014 or 2010–2014  Available frequency: Annual |
| Breakdown | Statewide data is available by age, sex, culturally diversity, Aboriginal Victorians, SEIFA IRSD, ARIA+ and by ICS. Data for Aboriginal Victorians and some geographic areas can be reported annually based on five-year rolling averages from a baseline of 2010–2014. Data available by custom request to CCV. |
| Further information | RD stage at diagnosis is not available for cervical and lung cancers but may be available in future. |

### Indicator Cancers diagnosed at late stage

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| Rationale | Diagnosis of cancer at the metastatic stage can lead to substantially reduced survival chances. Differences in stage are believed to be one of the main drivers of disparities in cancer survival between and within regions and population groups. |
| Measure | **11.6: Proportion of all solid tumours diagnosed at metastatic stage** |
| Target | Not set |
| Definitions | Numerator: Number of solid tumours, excluding brain and CNS tumours, diagnosed of residents, where metastatic disease is present at the time of diagnosis or within four months of diagnosis: determined from hospital notification with ICD codes C78–C79 (and C77 where appropriate) or metastatic diseases identified on a pathology report for specimens during this period  Denominator: Number of solid tumours diagnoses, excluding brain and CNS tumours  Mode: Proportion |
| Data sources | Baseline and future: VCR DHHS and VAED DHHS |
| Data availability | Baseline year: 2014  Available frequency: Annual |
| Breakdown | Statewide data is available (custom request to CCV). |
| Further information | This measure excludes brain and CNS cancers in which it is often not possible to differentiate between recurrence or metastatic progression of the primary tumour. |

# Outcome: Optimal diagnostics and treatment

## Key result area 12: Increase adherence to optimal care pathways

### Indicator Timely initiation of treatment

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| Rationale | Prompt treatment of cancer is more likely to ensure better outcomes for patients. In addition, lengthy waiting times can add to the stress on patients and family at an already difficult time. The recommended timeframes for steps of the care pathway for each specific tumour stream are defined in the [optimal care pathways](http://www.cancervic.org.au/for-health-professionals/optimal-care-pathways) <http://www.cancervic.org.au/for-health-professionals/optimal-care-pathways>. |
| Measure | **12.1: Median days from diagnosis to start of primary curative treatment** |
| Target | Not set |
| Definition | Median days from the date of diagnosis of the new cancer recorded in the VCR to the date of primary curative treatment of surgery, radiotherapy or systemic anti-cancer therapy (SACT). |
| Data sources | Baseline and future: VCR DHHS and VAED DHHS |
| Data availability | Baseline years: 2014 or 2010–2014  Available frequency: Annual |
| Breakdown | Statewide data is available by age, sex, culturally diversity, Aboriginal Victorians, SEIFA IRSD, ARIA+ and by ICS.  Data for Aboriginal Victorians and some geographic areas can be reported annually based on five-year rolling averages from a baseline of 2010–2014.  Statewide data available by tumour stream if case numbers permit.  Data available by custom request to Cancer Strategy and Development Unit DHHS. |
| Further information | The VCR uses business rules to determine the most valid diagnosis date. Where available, this is the date of the pathology specimen from which the diagnosis was made. For clinical and radiological diagnoses, the diagnosis date is determined to be the earliest date available/notified to the cancer registry. |

### Indicator Access to advanced imaging modalities

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| Rationale | The [optimal care pathway](http://www.cancervic.org.au/for-health-professionals/optimal-care-pathways) <http://www.cancervic.org.au/for-health-professionals/optimal-care-pathways> for many cancers includes the provision of advanced imaging, including PET, for the accurate diagnosis of many tumours streams. |
| Measure | **12.2: Proportion of patients receiving PET prior to primary treatment where appropriate** |
| Target | Not set |
| Definitions | Numerator: Number of patients who receive a PET before surgery, radiotherapy or SCAT as part of primary treatment, and as specified in the optimal care pathways for the specific tumour stream  Denominator: Number of patients who should receive a PET before surgery, radiotherapy or SCAT as part of primary treatment, and as specified in the optimal care pathways for the specific tumour stream  Mode: Proportion |
| Data sources | Baseline and short- and medium-term future: Hospital patient records audit  Revised baseline and future: Linked VCR DHHS, VAED DHHS, VRMDS DHHS, MBS Department of Health (DoH) and PBS DoH |
| Data availability | Baseline year: TBD  Available frequency: TBD |
| Breakdown | Statewide data currently not available for all patients. Linkage of MBS and PBS data with VCR and VAED data will rectify this.  In the short to medium term (two to five years), an audit of the patient records at one or more facilities could be conducted to report against this measure.  Data available by tumour stream if case numbers permit.  Data available by custom request to Cancer Strategy and Development Unit DHHS. |
| Further information | Reporting of this measure based on patient record audits will relate to patients treated at specific facilities or ICS and will not relate to the patient’s usual residence at the time of cancer diagnosis.  The specific imaging modalities included in Measure 12.2 will require review in the future as the new techniques are developed and their inclusion in optimal care pathways is revised. |

### Indicator Access to molecular diagnostics

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| Rationale | Molecular diagnostics tests are increasingly important for appropriately identifying and treating a range of cancers. The role of molecular diagnostics is expected to expand in the future. |
| Measures | **12.3: Proportion of patients receiving molecular diagnostics prior to primary treatment where appropriate (TBD)** |
| Target | Not set |
| Further information | Reporting of this measure based on patient record audits will relate to patients treated at specific facilities or ICS and will not relate to the patient’s usual residence at the time of cancer diagnosis.  Measure 12.3 will require review in the future as the molecular diagnostics are further developed and their application in optimal care pathways is revised. |

### Indicator Access to radiotherapy

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| Rationale | Radiotherapy is a well-established, effective and safe way to treat cancer and a small number of other conditions. Whether the treatment is delivered with a curative, prophylactic (preventive) or palliative intent influences the optimal timeframe for its implementation. The [optimal care pathway](http://www.cancervic.org.au/for-health-professionals/optimal-care-pathways) <http://www.cancervic.org.au/for-health-professionals/optimal-care-pathways> for many cancers includes radiotherapy as part of the primary treatment for specific tumours streams. |
| Measure | **12.4: Proportion of patients with non-metastatic lung, breast, rectal and oesophageal cancers receiving radical radiotherapy as part of their primary treatment** |
| Target | Not set |
| Definitions | Numerator: Number of patients with non-metastatic cancers receiving radical radiotherapy  Denominator: Number of patients with lung, breast, rectal and oesophageal cancers  Mode: Proportion |
| Data sources | Baseline and future: Linked VCR DHHS and VRMDS DHHS |
| Data availability | Baseline year: 2014  Available frequency: Annual |
| Breakdown | Statewide data is available by age, sex, Aboriginal Victorians, culturally diversity, SEIFA IRSD, ARIA+ and ICS if case numbers permit. Data for Aboriginal Victorians can be reported annually, based on five-year rolling averages from a baseline of 2010–2014.  Statewide data available by tumour stream if case numbers permit.  Data available by custom request to Cancer Strategy and Development Unit DHHS. |
| Further information | Classification of the lung, breast, rectal and oesophageal cancers as curative will typically occur when the cancer is diagnosed as metastatic. |

### Indicator Access to systemic therapy

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| Rationale | Systemic anti-cancer therapies include chemotherapy, targeted drugs and immunotherapy. The [optimal care pathway](http://www.cancervic.org.au/for-health-professionals/optimal-care-pathways) <http://www.cancervic.org.au/for-health-professionals/optimal-care-pathways> includes systematic therapy, including the route of delivery and recommended time lines, for specific tumours streams. The [*Guidelines for timely initiation of chemotherapy*](https://www2.health.vic.gov.au/about/health-strategies/cancer-care/cancer-services-framework/chemotherapy-guidelines) <https://www2.health.vic.gov.au/about/health-strategies/cancer-care/cancer-services-framework/chemotherapy-guidelines> describe the time lines for treating colorectal, lung, breast and ovarian cancers in Victoria and should be used alongside the optimal care pathways. |
| Measure | **12.5: Proportion of patients receiving systemic therapy within recommended time lines and where appropriate** |
| Target | Not set |
| Definitions | **Current**  Numerator: Number of patients who receive SACT as part of primary treatment within recommended time lines as specified in the chemotherapy guidelines for the specific tumour streams of colorectal, lung, breast and ovarian cancers  Denominator: Number of patients who receive SACT within six months of diagnosis and as part of primary treatment for the specific tumour streams  Mode: Proportion |
| Data sources | Baseline and short- and medium-term future: Linked VCR DHHS and VAED DHHS  Revised baseline and future: Linked VCR DHHS, VAED DHHS, MBS DoH and PBS DoH |
| Data availability | **Current**  Baseline year: 2014  Available frequency: Annual |
| Breakdown | Statewide data is available by age, sex, Aboriginal Victorians, culturally diversity, SEIFA IRSD, ARIA+ and by ICS. Data for Aboriginal Victorians can be reported annually based on five-year rolling averages from a baseline of 2010–2014.  Statewide data available by the major tumour streams of colorectal, lung and breast cancers.  Data available by custom request to Cancer Strategy and Development Unit DHHS. |
| Further information | Measure 12.5 applies only to colorectal, lung, breast and ovarian cancers as the evidence for time lines for delivering chemotherapy is stronger for these cancers. Second, colorectal, lung and breast cancers are three of the most common five cancers diagnosed in Victoria. *Guidelines for timely initiation of chemotherapy* describe the time lines for treatment of colorectal, lung, breast and ovarian cancers in Victoria.  Using the linked VCR and VAED dataset, the SCAT does not include oral therapies because this is not included in VAED. Improved linkage of PBS data with VCR and VAED data over coming years is expected to rectify this. |

### Indicator Complex surgery at appropriate facilities

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| Rationale | The outcomes for patients receiving complex surgery may be better at higher volume hospitals. |
| Measure | **12.6: Proportion of cancer related oesophagectomies and pancreatectomies taking place at appropriate volume facilities** |
| Target | Not set |
| Definitions | Numerator: Number of oesophagectomies and of pancreatectomies performed on patients with a related cancer diagnosis code (C15 or C16 or C25) present in the same VAED admission performed in facilities that averaged a minimum of total of six per year over a two-year period where the volume included all oesophagectomies and or pancreatectomies (including surgeries without a related cancer diagnosis code).  Denominator: Number of oesophagectomies and of pancreatectomies performed on patients with a related cancer diagnosis code (C15 or C16 or C25) present in the same VAED admission performed per year over a two-year period  Mode: Proportion |
| Data source | Baseline and future: VAED DHHS |
| Data availability | Baseline year: 2013–14  Available frequency: Annual |
| Breakdown | Data available for the state (custom request to Cancer Strategy and Development Unit DHHS). |
| Further information | The definition of Measure 12.6 is based on the NSW oesophageal and pancreatic cancer surgical optimisation measure.  The *Service capability framework* surgery module is planned for development in the future. This framework will define appropriate volume facilities for complex surgery in Victoria. |

### Indicator Referral to fertility preservation treatment

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| Rationale | Fertility preservation can be an important consideration for many cancer patients, with studies showing that infertility is a significant survival concern. The [optimal care pathway](http://www.cancervic.org.au/for-health-professionals/optimal-care-pathways) <http://www.cancervic.org.au/for-health-professionals/optimal-care-pathways> includes discussion of the option of fertility preservation and, where appropriate, referral to a fertility services for counselling and evaluation of options. |
| Measure | **12.7: Proportion of patients aged less than 40 years referred to fertility preservation treatment as part of their primary treatment** |
| Target | Not set |
| Data source | TBD |
| Further information | Data for this measure may be available from a linkage of VCR, VAED and MBS data using the MBS item for a specialist planning and managing a referred patient for the purpose of treatment by assisted reproduction/artificial insemination. |

### Indicator The prevalence of malnutrition in cancer patients

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| Rationale | Supportive care is an umbrella term used to refer to services, both generalist and specialist, that may be required by those affected by cancer. Cancer-related malnutrition has been identified as a significant supportive care need in the cancer population. In 2012 in Victoria, malnutrition was evident in 31 per cent of hospital patients undergoing cancer treatment (with 57 per cent of inpatients malnourished) and in 2014 overall prevalence was 26 per cent (with 57 per cent of inpatients malnourished) [[12]](#footnote-12) The cancer streams where malnutrition was more likely were upper gastrointestinal, head and neck, lung, haematological and colorectal. |
| Measure | **12.8: Proportion of admitted cancer separations with a LOS > 1 who have been coded as having malnutrition** |
| Target | Not set |
| Definitions | Numerator: Number of acute separations of adults aged 18 years or older with a cancer code as either the principal diagnosis or an additional diagnosis and a malnutrition code.  Denominator: Number of acute separations of adults aged 18 years or older with a cancer code as either the principal diagnosis or an additional diagnosis.  Mode: Proportion |
| Data source | Baseline and future: VAED DHHS |
| Data availability | Baseline year: 2012  Available frequency: Annual |
| Breakdown | Statewide data is available (custom request to Cancer Strategy and Development Unit DHHS, to liaise with relevant ICS) |
| Further information | The number of cancer separations coded as having malnutrition is captured in the VAED; however, it is recognised that this measure underestimates the true prevalence of malnutrition.  LOS > 1 refers to those admitted to an inpatient ward, that is, it excludes treatment administered at a day ward for example, chemotherapy.  The biennial Malnutrition in Victorian Cancer Services Point Prevalence Study captures data on the number of malnourished patients receiving nutrition care and may in future be a more accurate measure and data source for this key result area (and preferred indicator). However, at the time of publishing this data dictionary in 2018, this point prevalence study cannot be used as a long-term data source because it is not resourced and participation across the state is not mandatory. |

### Indicator Shared decision making across the cancer pathway

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| Rationale | Shared decision making is a key component of patient-centred health care. It is a process in which clinicians and patients work together to make decisions and select tests, treatments and care plans based on clinical evidence that balances risks and expected outcomes with patient preferences and values. In many situations there is no single ‘right’ healthcare decision because choices about treatment, medical tests and health issues come with intended and unintended consequences related to treatment. |
| Measure | **12.9: Proportion of patients who reported being involved in the decisions about their care and treatment as much as they wanted to** |
| Target | Not set |
| Definitions | Numerator: Number of people years who reported they were definitely involved as much as they wanted to be in decisions about (their) care and treatment (Response options — yes definitely, yes to some extent, no, I was not well enough to be involved in these decisions, only one type of treatment/treatment option was suitable for me, and not sure/cannot remember)  Denominator: Total number of people in survey with question responses, weighted to sample frame  Mode: Proportion |
| Data source | Baseline and future: Cancer experience patient survey DHHS |
| Data availability | Baseline year: About 2019  Available frequency: Up to four-yearly |
| Breakdown | Statewide data available by ICS and for populations within the ICS depending on the sample size of the survey. Data available by the major tumour streams. Data available by custom request to Cancer Strategy and Development Unit DHHS. |
| Further information | Reporting of this measure based on the survey will relate to patients treated at specific facilities or ICS and will not relate to the patient’s usual residence at the time of cancer diagnosis.  The Cancer Experience Patient Survey is planned for statewide implementation in 2019. Pilot surveys were conducted in three ICS in 2012 and in six sites over multiple ICS in 2015. These sites could use the data from the pilot as baseline data. |

### Indicator Multidisciplinary treatment and care

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| --- | --- |
| Rationale | Multidisciplinary care is an integrated team approach to health care in which medical and allied health professionals consider all relevant treatment and collaboratively develop an individual treatment and care plan for each patient. There is increasing evidence that multidisciplinary care improves patient outcomes. |
| Measure | **12.10: Proportion of newly diagnosed patients with evidence of multidisciplinary treatment plan in the patient records** |
| Target | Not set |
| Definitions | Numerator: Number of patients whose hospital records include evidence of discussion at a multidisciplinary team meeting  Denominator: Number of patients in the audit  Mode: Proportion |
| Data source | Baseline and future: Hospital patient records audit |
| Data availability | Baseline year: 2014  Available frequency: Annual |
| Breakdown | Statewide data is available and by ICS.  Statewide data available by tumour stream if case numbers permit.  Data available by custom request to Cancer Strategy and Development Unit DHHS. |
| Further information | Reporting of this measure based on patient records audit will relate to patients treated at specific facilities or ICS and will not relate to the patient’s usual residence at the time of cancer diagnosis.  Multidisciplinary cancer treatment software is planned for implementation in regional Victoria within the next few years and may be implemented statewide. This software may be a data source for this measure in future. |

### Indicator Local recurrence of primary tumour

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| Rationale | Rapid local recurrence of primary cancer may be due to a number of factors including that the cancer is fast growing, was more advanced or widespread than the initial diagnosis indicated, or that the cancer treatment did not remove all cancerous cells. |
| Measure | **12.11: Proportion of patients with local recurrence of primary tumour within two years of surgical resection or curative radiotherapy of a primary tumour** |
| Target | Not set |
| Definitions | Numerator: Number of patients where the primary tumour was detected within two years of surgical resection or curative radiotherapy of the initial tumour and at the same organ or site as the initial tumour, and the patient was resident in Victoria at the time of both diagnoses  Denominator: Number of patients where the primary tumour was not detected in the same organ or place as the initial tumour within two years of surgical resection or curative radiotherapy  Mode: Proportion |
| Data sources | Baseline and future: VCR DHHS and VAED DHHS |
| Data availability | Baseline year: 2014  Available frequency: Annual |
| Breakdown | Statewide data is available (custom request to Cancer Strategy and Development Unit DHHS). |
| Further information | Primary haematological, brain and CNS tumours are excluded from this measure. |

### Indicator End-of-life care

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| --- | --- |
| Rationale | All Victorians and their families should receive the best possible end-of-life care and be able to genuinely make choices about the care they receive as they approach the end of life. The terms ‘end-of-life care’ and ‘palliative care’ have different meanings. In this framework, ‘end-of-life care’ describes the care needed for people who are likely to die in the next 12 months due to progressive, advanced or incurable cancer. The term ‘palliative care’ describes an approach to care that improves the quality of life of people and their families who are facing the problems associated with a progressive illness. Palliative care is based on people’s needs rather than diagnosis or possible time to death. Palliative care can be provided at the same time as other treatment intended to reverse or resolve particular conditions.  Important issues in the transition from curative treatment to palliative care are agreement, timing and decision making. Appropriate palliative and end-of-life care can reduce the need for interventional treatments that provide little or no benefit to patients but that can reduce their quality of remaining life (aggressive interventions). |
| Measures | **12.12: Proportion of patients receiving specialist palliative care within 12 months prior to death**  **12.13: Proportion of patients receiving aggressive interventions within 30 days prior to death**  **12.14: Proportion of deaths due to cancer that occur in hospitals** |
| Target | Not set |
| Definitions | Measure 12.12:  Numerator: Number of patients receiving specialist palliative care within 12 months prior to death due to cancer that are registered in the respective calendar year  Denominator: Number of deaths due to all cancers of residents registered in the respective calendar year  *Mode:*  Proportion  Measure 12.13:  Numerator: Number of deaths due to all cancers of residents registered in the respective calendar year, where the person received SACT, radical radiation (curative intent) or was admitted to intensive care within 30 days prior to the date of death  *Denominator:* Number of deaths due to all cancers of residents registered in the respective calendar year  *Mode:* Proportion  Measure 12.14:  Numerator: Number of deaths due to all cancers of residents registered in the respective calendar year, where the death occurred in hospital  Denominator: Number of deaths due to all cancers of residents registered in the respective calendar year  *Mode:* Proportion |
| Data sources | Measure 12.12:  Baseline and future: VCR DHHS, VAED DHHS, VDI DHHS and Victorian Integrated Non-Admitted Health dataset (VINAH) DHHS  Measure 12.13:  Baseline and future: VCR DHHS, VAED DHHS, VRMDS DHHS, VEMD DHHS and VDI DHHS  Measure 12.14:  Baseline and future: VCR (DHHS), VAED (DHHS) and VDI (DHS) |
| Data availability | Measure 12.12:  Baseline year: 2014  Available frequency: Annual  Measure 12.13:  Baseline year: 2014  Available frequency: Annual  Measure 12.14:  Baseline year: 2014  Available frequency: Annual |
| Breakdown | Measure 12.12:  Statewide data is available and by ICS if case numbers permit (custom request to Cancer Strategy and Development Unit DHHS).  Measure 12.13:  Statewide data is available and by ICS if case numbers permit (custom request to Cancer Strategy and Development Unit DHHS).  Measure 12.14:  Statewide data is available and by ICS if case numbers permit (custom request to Cancer Strategy and Development Unit DHHS). |
| Further information | Measure 12.12 may underestimate the true proportion of patients receiving specialist palliative care within 12 months prior to death. Specialist palliative care is provided in the admitted and non-admitted (community) settings.  Measure 12.14 will use the residential address at the time of diagnosis (as recorded in VCR) rather than the residential address at the time of death (which is recorded on the death certificate and in ABS Causes of Death). |

## Key result area 13: Increase one- and five-year survival

### Indicator One-year survival

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| Rationale | Treatment of cancer aims to prolong survival and improve quality of life by improving symptoms. At this time, measuring patient quality of life is not routinely carried out, so measurement of survival offers the best way of assessing effectiveness of treatment. One-year survival in an area may more closely reflect access to and quality of local care than five-year survival. It is also able to more quickly reflect changes in both access and quality of care, including new treatments.  Relative survival is a means of comparing the survival of people who have been diagnosed with cancer with those who don’t, over a certain period of time. Relative survival is net survival from cancer – the percentage who would have survived if cancer was the only cause of death. The relative survival rate shows whether the cancer shortens life and is based on the assumption of independent competing causes of death. |
| Measure | **13.1: One-year survival from all cancers** |
| Target | Double the improvement in one-year survival by 2040 from baseline |
| Definitions | Numerator: Observed one-year survival proportion in cancer cohort (all Victorians diagnosed with a malignant cancer during the five-year period), adjusted for age and sex  Denominator: Expected one-year survival in whole population, adjusted for age and sex  Mode: Proportion |
| Data sources | Baseline and future: VCR DHHS, ABS Causes of Death |
| Data availability | Baseline years: 2010–2014  Available frequency: Five-yearly based on most recent five years |
| Breakdown | Statewide data is available by age, sex, ARIA+ and ICS (custom request to CCV). |
| Further information | The goal of doubling the improvement in one-year survival will be met if the improvement in relative survival between the periods 2030–2034 and 2035–2039 is twice that of the improvement between the periods 2005–2009 and 2010–2014. |

### Indicator One-year survival from selected cancers

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| Rationale | Based on the following criteria, the one- and five-year survival of a number of specific cancers are included in the framework. The survival rate is:   * varied across Victoria * lower in Victoria than other Australian jurisdictions * poor, with a high ratio of incidence to mortality * unchanged over time. |
| Measures | **13.2: One-year survival from lung cancer**  **13.3: One-year survival from pancreatic cancer**  **13.4: One-year survival from ovarian cancer**  **13.5: One-year survival from colorectal cancer**  **13.6: One-year survival from brain cancer**  **13.7: One-year survival from oesophagus cancer**  **13.8: One-year survival from acute myeloid leukaemia** |
| Target | Not set |
| Definitions | Numerator: Observed one-year survival proportion in cancer-specific cohort (all Victorians diagnosed with a specific malignant cancer during the five-year period), adjusted for age and sex  Denominator: Expected one-year survival in whole population, adjusted for age and sex  Mode: Proportion |
| Data sources | Baseline and future: VCR DHHS, ABS Causes of Death |
| Data availability | Baseline years: 2010–2014  Available frequency: Five-yearly based on most recent five years |
| Breakdown | Statewide data is available by age, sex, ARIA+ and by ICS for the more common cancers (lung, colorectal) (custom request to CCV). |
| Further information | Nil |

### Indicator Five-year relative survival

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| --- | --- |
| Rationale | Relative five-year survival is an internationally used measure of survival from cancer. Period survival analysis is used to provide the most up-to-date measure of recent survival. |
| Measure | **13.9: Five-year relative survival from all cancers** |
| Target | Double the improvement in five-year survival by 2040 from baseline |
| Definitions | Numerator: Observed five-year survival proportion in cancer cohort (all Victorians diagnosed with a malignant cancer during the five-year period) adjusted for age and sex, and based on period survival of one year for patients diagnosed in the most recent year, two years for those diagnosed in the second most recent year and so on  Denominator: Expected five-year survival in whole population, adjusted for age and sex  Mode: Proportion |
| Data sources | Baseline and future: VCR DHHS, ABS Causes of Death |
| Data availability | Baseline years: 2010–2014  Available frequency: Five-yearly based on most recent five years |
| Breakdown | Statewide data is available by age, sex, ARIA+, SEIFA and by ICS (custom request to CCV). |
| Further information | The goal of doubling the improvement in five-year survival will be met if the improvement in relative survival between the periods 2030–2034 and 2035–2039 is twice that of the improvement between the periods 2005–2009 and 2010–2014. |

### Indicator Five-year relative survival from selected cancers

|  |  |
| --- | --- |
| Rationale | The five-year relative survival of specific cancers is included in the framework based on criteria above. |
| Measures | **13.10: Five-year relative survival from lung cancer**  **13.11: Five-year relative survival from pancreas cancer**  **13.12: Five-year relative survival from ovary cancer**  **13.13: Five-year relative survival from colorectal cancer**  **13.14: Five-year relative survival from brain cancer**  **13.15: Five-year relative survival from oesophagus cancer**  **13.16: Five-year relative survival from acute myeloid leukaemia** |
| Target | Not set |
| Definitions | Numerator: Observed five-year survival proportion in cancer cohort, adjusted for age and sex, and based on period survival of one year for patients diagnosed in the most recent year, two years for those diagnosed in the second most recent year and so on  Denominator: Expected five-year survival in whole population, adjusted for age and sex  Mode: Proportion |
| Data sources | Baseline and future: VCR DHHS, ABS Causes of Death |
| Data availability | Baseline years: 2010–2014  Available frequency: Five-yearly based on most recent five years |
| Breakdown | Statewide data is available by age, sex ARIA+, SEIFA and by ICS for the more common cancers (lung, colorectal) (custom request to CCV). |
| Further information | Nil |

### Indicator Five-year survival of early and late detected cancers

|  |  |
| --- | --- |
| Rationale | The stage of a cancer at diagnosis is one of the most important factors in predicting survival rates. Increasing the proportion of cancers detected at early stage will improve overall cancer survival. |
| Measures | **13.17:** **Five-year survival from all cancers diagnosed at stages 1 and 2**  **13.18: Five-year survival from all cancers diagnosed at stages 3 and 4** |
| Target | Not set |
| Definitions | Measure 13.17:  Numerator: Observed five-year survival proportion in cancer cohort, adjusted for age and sex, who were diagnosed with breast, colorectal or prostate cancer at RD stage 1 or stage 2, and based on period survival of one year for patients diagnosed in the most recent year, two years for those diagnosed in the second most recent year and so on  Denominator: Expected five-year survival in whole population, adjusted for age and sex  Mode:Proportion  Measure 13.18:  Numerator: Observed five-year survival proportion in cancer cohort, adjusted for age and sex, who were diagnosed with breast, colorectal or prostate cancer at RD stage 3 or stage 4, and based on period survival of one year for patients diagnosed in the most recent year, two years for those diagnosed in the second most recent year and so on  *Denominator:* Expected five-year survival in whole population, adjusted for age and sex  *Mode:* Proportion |
| Data sources | Baseline and future: VCR DHHS, ABS Causes of Death |
| Data availability | Baseline years: 2010–2014  Available frequency: Five-yearly based on most recent five years |
| Breakdown | Statewide data is available by age, sex and ARIA+ and by ICS (custom request to CCV). |
| Further information | RD stage is only available for breast, colorectal and prostate cancers. It is expected that RD stage will be available for additional cancers the future.  In Victoria derivation of RD stage using the business rules was achievable for a very high proportion (86–96 per cent) of four of the five tumour types tested.[[13]](#footnote-13) |

## Key result area 14: Improve quality of life

### Indicator Health-related quality of life

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| Rationale | There is growing recognition of the importance of wellness during and after treatment for cancer. Health-related quality of life (HRQOL) has become a more accurate predictor of cancer survival than some other clinical parameters such as performance status. HRQOL refers to multidimensional assessments that include at least the physical, emotional (or psychological) and social domains. HRQOL is a patient-reported outcome measure (PROM). |
| Measure | **14.1: Health-related quality of life following primary treatment (TBD)** |
| Target | Not set |
| Further information | To date, HRQOL has been collected for patients treated for specific cancers or in specific ICS or facilities. Thus, local or tumour stream specific reporting may be available. |

# Outcome: Best possible experience of care systems

## Key result area 15: Improve patient experience of health care

### Indicator Patient experience of inpatient health care

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| --- | --- |
| Rationale | Patient experience measurement and reporting contributes to improving the safety and quality of care in health services. Patient experience encompasses the range of interactions that patients have with the healthcare system. As an integral component of health care quality, patient experience includes several aspects of health care delivery that patients value highly when they seek and receive care. Evaluating patient experience along with other components such as effectiveness and safety of care is essential to providing a complete picture of health care quality. Inpatient health care is the primary component of treatment and care for cancer. |
| Measures | **15.1: Proportion of adults admitted to public hospitals due to cancer who report positive overall healthcare experience**  **15.2: Proportion of children and adolescents admitted to hospital due to cancer who report positive healthcare experience (TBD)** |
| Target | Not set |
| Definitions | **Measure 15.1:**  Primary source  Numerator: Number of adults who have received inpatient health care at public hospitals with principal diagnosis coded as specified cancer-related DRGs and who rated their overall care received while in hospital as very good or good (positive score) (Scale: very good, good, adequate, poor and very poor)  Denominator: Number of adults in survey with question responses  Mode: Proportion  Secondary source  Numerator: Number of adults who rated their satisfaction with their overall care received from all professionals involved in their treatment in hospital as very satisfied or satisfied (positive score) (Scale: very satisfied, satisfied, neither satisfied or dissatisfied, dissatisfied, very dissatisfied)  Denominator: Number of adults in survey with question responses  Mode: Proportion  **Measure 15.2:**  TBD |
| Data sources | **Measure 15.1:**  Primary source  Baseline and future: Victorian Healthcare Experience Survey (VHES) DHHS, Victorian Agency for Health Information (VAHI), VAED DHHS  Secondary source  Baseline and future: Cancer Experience Patient Survey DHHS  **Measure 15.2:**  Baseline and future:TBD |

|  |  |
| --- | --- |
| Data availability | Measure 15.1:  Primary source  Baseline year: 2014  Available frequency: Annual  Secondary source  Baseline year: 2018  Available frequency: Up to four-yearly  Measure 15.2:  Baseline year and available frequency: TBD |
| Breakdown | **Measure 15.1:**  **Primary source:** Statewide data is available (custom request to VAHI)  **Secondary source:** Statewide data available by ICS and for populations within the ICS depending on the sample size of the survey. Data available by the major tumour streams. Data available by custom request to Cancer Strategy and Development Unit DHHS. |
| Further information | Reporting of Measure 15.1 will relate to patients treated at specific public facilities or ICS and will not relate to the patient’s usual residence at the time of cancer diagnosis. The patient experience relates to the experience of the patient at a specific episode of inpatient treatment, as a same-day or in-hospital treatment of one or more nights. The sample frame for the VHES is representative of patients admitted to hospitals and not of patients admitted to hospitals for cancer treatment.  As at October 2017, the VHES is under review due to the establishment of VAHI. Following completion of the review, Measure 15.1 should be reviewed.  The Cancer Experience Patient Survey is planned for statewide implementation in 2019. Pilot surveys were conducted in three ICS in 2012 and in six sites over multiple ICS in 2015. These sites could use the data from the pilot as baseline data. |

### Indicator Patient experience of transition from inpatient health care

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| --- | --- |
| Rationale | The patient experience transitions index from in-patient healthcare has been developed with the aim of improving processes relating to discharge planning. It incorporates the average of the positive scores for four adult inpatient questions relating to discharge. The index provides an overview of how hospitals, health services, peer groups and the state are performing in the discharge process. |
| Measure | **15.3: Proportion of adults admitted to public hospitals due to cancer who report positive transition from care index score** |
| Target | Not set |
| Definitions | Numerator: Number of adults who have received inpatient health care at public hospitals with principal diagnosis coded as specified cancer-related DRGs and who rated each of the following characteristics as very good or good (positive care) (Scale: very good, good, adequate, poor and very poor): before leaving hospital, receipt of sufficient information about managing health and care at home; family and home situation taken into account when planning discharge; adequate arrangements made by the hospital for any services needed; if required, provision of necessary information to GP about the treatment or advice given while in hospital  Denominator: Number of adults in survey with question responses  Mode: Proportion |
| Data source | Baseline and future: VHES VAHI |
| Data availability | Baseline year: 2014  Available frequency: Annual |
| Breakdown | Statewide data is available (custom request to VAHI). |
| Further information | Reporting of Measure 15.3 will relate to patients transitioning from specific public facilities or ICS and will not relate to the patient’s usual residence at the time of cancer diagnosis. The patient experience relates to the experience of the patient at a specific transition from inpatient health care as a same-day or in-hospital treatment of one or more nights. The sample frame for the VHES is representative of patients admitted to hospitals and not of patients transitioning from inpatient health care following cancer treatment.  As at October 2017, the VHES is under review due to the establishment of VAHI. Following completion of the review, Measure 15.3 should be reviewed. |

### Indicator Patient experience of emergency department health care

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| --- | --- |
| Rationale | Patient experience measurement and reporting contributes to improving the safety and quality of care in health services. Patient experience encompasses the range of interactions that patients have with the healthcare system, including in the emergency department. Patients with cancer may receive out-of-hours and urgent care in the emergency department setting. |
| Measures | **15.4: Proportion of adults attending emergency departments due to cancer who report positive overall healthcare experience (TBD)** |
| Target | Not set |
| Further information | Nil |

### Indicator Patient experience of outpatient health care

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| --- | --- |
| Rationale | Increasingly, people affected by cancer will experience some of their treatment, monitoring and supportive care services in primary care settings, and many will transition in and out of acute care and primary care settings. Patient experiences of care in these settings will contribute to their outcomes. |
| Measures | **15.5: Proportion of people attending hospital outpatients due to cancer who report positive experience healthcare experience (TBD)** |
| Target | Not set |
| Further information | Nil |

### Indicator Patient experience of primary health care

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| --- | --- |
| Rationale | GPs work directly with patients across five of the seven steps of the optimal care pathways delivering prevention messages, encouraging and undertaking screening, facilitating early diagnosis, enabling referral to appropriate specialists within optimal timeframes and supporting patients through active treatment, survivorship and end of life. |
| Measures | **15.6: Proportion of people attending primary care due to cancer who report positive healthcare experience (TBD)** |
| Target | Not set |
| Further information | Collection of data relating to primary care patient experience is under consideration. |

## Key result area 16: Improve patient experience of screening

### Indicator Client satisfaction with BreastScreen Victoria

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| Rationale | BreastScreen Victoria (BSV) conducts an annual client satisfaction survey providing an ongoing mechanism for measuring and monitoring all aspects of service delivery. There is a clear relationship between women’s satisfaction of their breast screening experience and their intention to return for rescreening. |
| Measure | **16.1: Proportion of women who have a mammogram by BreastScreen Victoria who rate the service as highly satisfactory** |
| Target | Not set |
| Definitions | Numerator: Number of women who had a mammogram at BSV who rated their overall experience as highly satisfactory (Scale: highly satisfactory, somewhat satisfactory, neither satisfied or dissatisfied, somewhat dissatisfied, highly dissatisfied, unsure)  Denominator: Number of women in survey with question responses  Mode: Proportion |
| Data source | BSV Consumer Satisfaction Survey BSV |
| Data availability | *Baseline year :* 2014  *Available frequency:* Annual |
| Breakdown | Statewide data is available and by BSV clinic and BSV regions (custom request to BSV). |
| Further information | The survey is sent to all women who had a breast screen during a defined period (usually a two- to four-week period). The survey has been conducted annually since 2013. |

### Indicator Breast cancer rescreening rate

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| --- | --- |
| Rationale | There is a clear relationship between women’s satisfaction of their breast screening experience and their intention to return. Women who are dissatisfied are significantly less likely to intend to return for another breast screen in future. Rescreen rates measure the proportion of women who return for screening at BSV within the recommended screening interval. A high rescreen rate is important to both increase the likelihood of breast cancers being detected early and to maintain overall participation. Reviewing rescreen rates after the initial screen is the most important indicator of ongoing screening. |
| Measure | **16.2: Proportion of women who are rescreened at BreastScreen Victoria within 27 months after the first screen** |
| Target | Not set |
| Definitions | Numerator: Number of women aged 50–67 years who were rescreened by BreastScreen Victoria within 27 months of the first screen  Denominator: Number of women aged 50–67 years who have had first screen by BreastScreen Victoria  Mode: Proportion |
| Data source | AIHW BreastScreen Australia monitoring reports |
| Data availability | *Baseline year:* 2014 - 2015  *Available frequency:* Annual |
| Breakdown | Statewide data available by age (reported by AIHW). |
| Further information | While the recommended screening interval is 24 months, a 27-month time period is set to allow a reasonable timeframe for women to respond to invitations.  The recommended screening age changed from 50–69 years to 50–74 years in 2014 and rescreening rates for women 50–72 years will be reported from about 2018. At that time the definition of Measure 16.2 will be revised.  National, state and territory rates are available from AIHW BreastScreen Australia monitoring reports. |

### Indicator Cervical cancer rescreening rate

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| --- | --- |
| Rationale | There is a clear relationship between a woman’s experience of her cervical screening test and her intention to rescreen. Women who had a previously negative experience are significantly less likely to return for another test. After receiving a 27-month cervical screening register reminder, it is important that a high proportion of women rescreen to increase the likelihood of cervical cancers being detected early and treated successfully. |
| Measure | **16.3: Proportion of women who are rescreened for cervical cancer within 3 months of receiving a 27-month cervical screening register reminder letter** |
| Target | Not set |
| Definitions | Numerator: Number of women aged 20–69years who were rescreened for cervix cancer within three months of the 27-month cervical screening register reminder letter  Denominator: Number of women aged 20–69 years who were sent the 27-month cervical screening register reminder letter  Mode: Proportion |
| Data source | Cervical Screening in Australia (AIHW) |
| Data availability | *Baseline year:* 2015 - 2016  *Available frequency:* Annual |
| Breakdown | Statewide data is reported by AIHW. |
| Further information | From 1 December 2017 the National Cervical Screening Program changed to include five-yearly cervical screening of HPV-vaccinated and unvaccinated women 25–69 years of age, using a primary HPV test with partial HPV genotyping and reflex liquid-based cytology triage, followed by exit testing of women 70–74 years of age[[14]](#footnote-14) (MSAC 2014). The previous program, which recommended two-yearly cervical screening using Pap tests for women 18-69 years. Screening reminders are sent three months prior to the cervical screening test becoming due and three months after the test due date (i.e. at 27 months).  The new program requires a revision of the measure for cervical cancer rescreening and the definition. A new baseline will need to be established from 2019-20.  National, state and territory rates are available from AIHW Cervical Screening in Australia. |

### Indicator Bowel cancer screening rate

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| --- | --- |
| Rationale | There is a clear relationship between a person completing an initial bowel screening test and their intention to rescreen as part of the National Bowel Cancer Screening Program (NBCSP). The participation rate was approximately three times higher for people receiving their second or later (subsequent) screening invitation when compared with those receiving their initial screening test. A high rescreen rate is important to increase the likelihood of colorectal cancers being detected early and treated successfully. |
| Measure | **16.4: Proportion of adults who are rescreened by the National Bowel Cancer Screening Program** |
| Target | Not set |
| Definitions | Numerator: Number of adults aged 50–74 years who were screened in the NBCSP who were screened in a previous invitation round  Denominator: Number of adults aged 50–74 years who were screened in the NBCSP in the previous round and were invited to participate in a subsequent round, excluding suspended and opted-out participants  Mode: Proportion |
| Data source | NBCSP DoH |
| Data availability | *Baseline year:* 2014–2015  *Available frequency:* Annual |
| Breakdown | Statewide data is available (reported by AIHW) |
| Further information | Since 2006 the NBCSP has continued to invite additional age cohorts to participate in the program. By 2019–20 all eligible people aged 50–74 years will be invited to participate every two years. At this time, the definition for Measure 16.4 will be reviewed. |

# Outcome: Integrated research systems

## Key result area 17: Innovations and improved evidence of best practice

### Indicator Embedded research into the health system

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| Rationale | High-quality cancer research drives clinical practice improvements and underpins prevention, detection, treatment and support services and interventions. Clinical trials are fundamental to establish whether new cancer treatments or new ways of using existing therapies, diagnostic tests and preventive or supportive interventions are safe and effective. Clinical trials generate the evidence for new treatments and best practice cancer care. |
| Measures | **17.1: Number of new enrolments in cancer intervention clinical trials**  **17.2: Number of recruiting cancer intervention clinical trials**  **17.3: Number of human research ethics committee** **approved cancer-related studies** |
| Target | Not set |
| Definitions | **Measure 17.1:**  Number of new patients enrolled in intervention clinical trials that meet the WHO definition of a clinical trial and are classified as treatment according to a Common Scientific Outline  **Measure 17.2:**  Number of recruiting intervention clinical trials that meet the WHO definition of a clinical trial and are classified as treatment according to a Common Scientific Outline  **Measure 17.3:**  Number of cancer-related research studies that have been approved by a human research ethics committee |
| Data sources | **Measure 17.1 and Measure 17.2:**  Baseline and future: Cancer Trials Management Scheme CCV  **Measure 17.3:**  Baseline and future: Coordinating Office for Clinical Trial Research DHHS |
| Data availability | **Measure 17.1 and Measure 17.2:**  Baseline year: 2014  Available frequency: Annual  **Measure 17.3:**  Baseline year: 2015  Available frequency: Annual |
| Breakdown | **Measure 17.1 and Measure 17.2:**  Statewide data available by metropolitan/regional and ICS and tumour stream (special request to CCV).  **Measure 17.3:**  Statewide data available by participating public hospital human research ethics committee and ICS (custom request to Coordinating Office for Clinical Trial Research DHHS). |

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| Further information | Measures 17.1 and 17.2 are limited to research in intervention clinical trials and do not include research relating to prevention, screening, supportive care or to basic science research not involving humans. Future work is required to address this limitation in the framework.  Measure 17.3 is limited to research involving humans and does not include basic science research. Future work is required to address this limitation in the framework.  Nationally and internationally there is ongoing work to develop measures of research outcomes. This work will be monitored to inform further development of the framework. |

### Indicator Accelerate translation of research into prevention and clinical practice

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| Rationale | The creation of knowledge by research does not, of itself, lead to widespread implementation and positive impacts on health. The knowledge must be translated into changes in practice and policy for the benefits to flow to Victorians. It can also take many years for research evidence to reach prevention and clinical practice.  The PBS provides timely, reliable and affordable access to necessary medicines for Australians. Rapid uptake of newly listed medications is a measure of translation of research into clinical practice.  To achieve population-level improvements in sustained cessation of smoking will require continuation of an evidence-based multi-strategy approach, predicated on translation of research into prevention practice. |
| Measures | **17.4: Ratio of eligible patients who receive new SACT medications within 12 months of listing on the PBS relative to cancer incidence**  **17.5: Quit ratio of rate of sustained ex-smokers to rate of ever smokers** |
| Target | Not set |
| Definitions | **Measure 17.4:**  Numerator: Number of patients who are dispensed with specified SACT medications from public hospital pharmacies within 12 months of listing on the PBS for a specified condition  Denominator: Number of new cancers of residents of specified tumour type and stage at diagnosis in the respective calendar year  Mode: Proportion  **Measure 17.5:**  Numerator: Number of adults aged 18 years and older who reported smoking at least 100 cigarettes in their lifetime and who stopped smoking 12 or more months ago  Denominator: Number of adults aged 18 years and older who reported smoking at least 100 cigarettes in their lifetime  Mode: Proportion |
| Data sources | **Measure 17.4:**  Baseline and future: VCR DHHS, VAED DHHS, VINAH (DHHS), PBS DoH  **Measure 17.5:**  Baseline and future: Smoking and Health Survey CCV |

|  |  |
| --- | --- |
| Data availability | Measure 17.4:  Baseline year: 2015  Available frequency: Annual  Measure 17.5:  Baseline year: 2015  Available frequency: Annual |
| Breakdown | Measure 17.4: Statewide data is available and by ICS (custom request to Cancer Strategy and Development Unit DHHS).  Measure 17.5: Statewide data is available (reported by CCV). |
| Further information | Measures 17.4 and 17.5 capture key components of research translation. Measure 17.4 captures rapid uptake of novel pharmaceuticals. Measure 17.5 captures the population outcome of evidence-based prevention practice.  While informative, there are substantial limitations to these measures. The measures do not include the breath of translation including uptake of new devices, most behavioural interventions or supportive care interventions. Nor do they capture trials for new uses of existing drugs.  Nationally and internationally there is ongoing work to develop measures of research outcomes. This work will be monitored to inform further development of the framework. |

# Appendix: Data sources and custodians

| **Data source** | **Data custodian** |
| --- | --- |
| *About You* (also known as Victorian Student Health and Wellbeing Survey (VSHAWS)) | Department of Education and Training |
| Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS) | Australian Bureau of Statistics |
| Australian Secondary Students Alcohol and Drug Survey (ASSAD) | Cancer Australia |
| Breast Screen Australia monitoring reports | Australian Institute of Health and Welfare |
| Breast Screen Victoria (BSV) Customer Satisfaction Survey | Cancer Council Victoria |
| Causes of Death | Australian Bureau of Statistics |
| Cancer Experience Patient Survey | Department of Health and Human Services |
| Cancer Trials Management Scheme | Cancer Council Victoria |
| National Cancer Screening Register | Department of Health Australian Government |
| National Drug Strategy Household Survey (NDSHS) | Australian Institute of Health and Welfare |
| National Health Survey (NHS) | Australian Bureau of Statistics |
| National Human Papillomavirus Vaccination (HPV) Program Register | Victorian Cytology Service, together with the Australian Government Department of Health |
| National Sun Protection Survey | Cancer Council Victoria |
| Medical Benefits Scheme (MBS) | Department of Health Australian Government |
| Pharmaceutical Benefits Scheme (PBS) | Department of Health Australian Government |
| Public Health Event Surveillance System (PHESS) | Department of Health and Human Services |
| Smoking and Health Survey | Cancer Council Victoria |
| Victorian Admitted Episodes Dataset (VAED) | Department of Health and Human Services |
| Victorian Cancer Registry (VCR) | Department of Health and Human Services |
| Victorian Child Health and Wellbeing Survey (VCHWS) | Department of Health and Human Services |
| Victorian Death Index (VDI) | Department of Health and Human Services |
| Victorian Emergency Minimum Dataset (VEMD) | Department of Health and Human Services |
| Victorian Healthcare Experience Survey (VHES) | Victorian Agency for Health Information (VAHI) |
| Victorian Population Health Survey (VPHS) | Department of Health and Human Services |
| Victorian Integrated Non-Admitted Health (VINAH) dataset | Department of Health and Human Services |
| Victorian Radiotherapy Minimum Data Set (VRMDS) | Department of Health and Human Services |

1. ICD-10-AM is the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification. Introduced July 2017 [↑](#footnote-ref-1)
2. Whiteman DC et al. 2015, ‘Cancers in Australia in 2010 attributable to modifiable factors: summary and conclusions’, ANZJPH 38; 477–484 [↑](#footnote-ref-2)
3. Whiteman DC et al. 2015, ‘Cancers in Australia in 2010 attributable to modifiable factors: summary and conclusions’, ANZJPH 38; 477–484 [↑](#footnote-ref-3)
4. AIHW 2016, Australian Burden of Disease Study series no. 3. BOD 4, Canberra [↑](#footnote-ref-4)
5. Based on the methodology used by Coory et al. 2013, ‘Australia is continuing to make progress against cancer, but the regional and remote disadvantage remains’, MJA 199; 605–608. [↑](#footnote-ref-5)
6. Whiteman DC et al. 2015, ‘Cancers in Australia in 2010 attributable to modifiable factors: summary and conclusions’, ANZJPH 38; 477–484 [↑](#footnote-ref-6)
7. Whiteman DC et al. 2015, ‘Cancers in Australia in 2010 attributable to modifiable factors: summary and conclusions’, ANZJPH 38; 477–484 [↑](#footnote-ref-7)
8. Whiteman DC et al. 2015, ‘Cancers in Australia in 2010 attributable to modifiable factors: summary and conclusions’, ANZJPH 38; 477–484 [↑](#footnote-ref-8)
9. Whiteman DC et al. 2015, ‘Cancers in Australia in 2010 attributable to modifiable factors: summary and conclusions’, ANZJPH 38; 477–484 [↑](#footnote-ref-9)
10. Hong et al. 2016, ‘Novel population‐based study finding higher than reported hepatocellular carcinoma incidence suggests an updated approach is needed', Hepatology 63;1205–1212 [↑](#footnote-ref-10)
11. Thursfield V, Farrugia H 2016, Cancer in Victoria: statistics and trends 2015, Cancer Council Victoria, Melbourne. [↑](#footnote-ref-11)
12. Marshall K, Loeliger J 2012, Investigating practices relating to malnutrition in Victorian Cancer Services – summary report. DHHS, State Government of Victoria, Melbourne

    Loeliger J, Kiss N 2014, Phase II Malnutrition in Victorian Cancer Services: summary report, Department of Health and Human Services, State Government of Victoria, Melbourne. [↑](#footnote-ref-12)
13. Thursfield V, Farrugia H 2016, Cancer in Victoria: statistics and trends 2015, Cancer Council Victoria, Melbourne. [↑](#footnote-ref-13)
14. MSAC (Medical Services Advisory Committee) 2014. MSAC application no.1276: National Cervical Screening Program renewal. Canberra: MSAC. [↑](#footnote-ref-14)