

# Interactive reports using latest statistics from the Victorian Cancer Registry

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Guide to use, including details of information supplied in each report and user defined selection options

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Version: 4.0  
Updated 23<sup>rd</sup> October 2020

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## Overview

Select one of the following report types from left hand side of the home page:

1. Time trends by sex
  2. Time trends by cancer
  3. Counts by age group
  4. Rates by age group
  5. Cancer maps
  6. Leading cancers
  7. Cancer Prevalence
  8. Regional statistics
  9. Cancer in migrants
- Reports by DHHS tumour stream

**Reports:** Details of each report are given in the following section.

**Criteria:** Each report can be tailored accordingly by the selection criteria as described below.

**Cancer groupings:** The exact inclusions within cancer groupings are described in the Appendix 1 (major solid tumour groups) and 2 (major haematological cancer groups). These may not correspond to groups from other sources so please note there may be some important differences. For instance, some 'Head and neck' cancer groupings include the nasal cavity, accessory sinuses and larynx, while others do not.

In these reports, cancers are grouped by the *International Statistical Classification of Diseases and Related Health Problems Version 10* (ICD-10) codes.

There are three sets of cancer groupings used:

- **VCR-defined detailed groups** – allow users to view data for very specific tumour types.
- **VCR-defined main groups** – uses larger groupings of ICD-10 to present data in situations where larger sample sizes are required for meaningful results.
- **DHHS tumour streams** – groups cancers by organ system, as defined by the Victorian Department of Health and Human Services.

The ICD-10 codes included in each cancer label for each set of cancer groupings are presented in Appendix 1 (major solid tumour groups) and 2 (major haematological cancer groups).

Reports 1 – 9 either use the VCR-defined detailed groups or the VCR-defined main groups.

Data organised using the DHHS tumour stream groupings is available for key reports under the 'Reports by DHHS tumour stream' option.

**Results:** A graph and data is displayed on the web page.

**Embed:** You can insert this report into your web page by copying and pasting the code, obtained through 'Embed' button, into your site.

**Downloads:** There are 2 options available for downloading each report:

- **PDF, PNG or Static Html format** - the whole report may be downloaded in pdf, png or static html format for printing or inserting into documents

- **Data (csv)** - the data table for each report may be downloaded as a comma separated value format (.csv) for use in other applications.

## Report 1: Time trends by sex

**Description:** Victorian cancer trends over time for a specified cancer including incidence/mortality and males/females/persons.

The user can select the:

- **Cancer** – all cancers or a specific type of cancer.
- **Population standard** – the standard population to use in direct age-standardisation of rates. All rates are expressed as age-standardised rates per 100,000 males/females/persons per year. The World Standard Population (Segi) is the default population standard as used by IARC in international published figures.
- **Time period** – display trends for the last 5, 10 or 20 years or all years from 1982 (when the registry became population-based). All periods include the years up to and including the latest available year as shown on the “About” tab.
- **Rates** – the user can also select, by checking/un-checking the boxes in the legend, whether to display rates for male, females or persons and for incidence or mortality.
- **Graph** – annual rates are displayed as lines according to the selections made from the above lists.
- **Table** – the table displays all rates plotted in the chart together with the corresponding counts of new cases and/or deaths.

Please note:

- For less common cancers, a small change in the number of cases can have a large impact on the rate. Fluctuations in data for less common cancers should therefore be interpreted with caution.
- For gender-specific cancers, only data for the relevant gender is presented.

## Report 2: Time trends by cancer

**Description:** Victorian cancer trends over time for selected cancers for incidence or mortality and for males or females or persons.

The user can select the:

- **Rate** – either incidence or mortality rates are displayed.
- **Sex** – rates displayed for males, females or persons.
- **Population standard** – the standard population to use in direct age-standardisation of rates. All rates are expressed as age-standardised rates per 100,000 males/females/persons per year. The World Standard Population (Segi) is the default population standard as used by IARC in international published figures.
- **Time period** – Display trends for the last 5, 10 or 20 years or all years from 1982 (when the registry became population-based).
- **Cancers** – the user can also select by checking/un-checking the boxes in the legend which cancers are to be displayed on the graph.
- **Graph** – annual rates are displayed as lines according to the selections made from above lists

- **Table** – the table displays all rates plotted in the chart together with the corresponding counts of new cases and/or deaths.

Please note:

- For less common cancers, a small change in the number of cases can have a large impact on the rate. Fluctuations in data for less common cancers should therefore be interpreted with caution.
- For gender-specific cancers, only data for the relevant gender is presented.

## Report 3: Counts by age group

**Description:** Counts of new cases and/or deaths by sex and age group for a specified cancer during a given year.

The user can select the:

- **Cancer** – all cancers or a specific type of cancer.
- **Period** – the year (from 1982 up to the latest available year as shown on the “About” tab) for which the number of cases or deaths per are presented.
- **Counts** – the user can also select by checking/un-checking the boxes in the legend which counts are to be displayed on the graph (new cases and/or deaths for males, female or persons)
- **Graph** – average new cases/deaths per year for persons in six age groups are displayed as bars according to the selections made from above lists. Age groups are 0-14 (childhood), 15-25 (adolescent and young adult), 25-49, 50-64, 65-79 and 80+ years, and are defined as the age at cancer diagnosis or cancer death.
- **Table** – the table displays all counts by age group as plotted in the chart.

## Report 4: Rates by age group

**Description:** Age-specific incidence/mortality rates by sex for a specified cancer during a given time period.

The user can select the:

- **Cancer** – all cancers or a specific type of cancer.
- **Period average** – the time period for which the average annual age-specific incidence/mortality rates are calculated (3, 5, 10 years or all years since 1982). All periods include the years up to and including the latest available year as shown on the “About” tab.
- **Logarithmic scale** – there is a check box to select a semi-log plot with rates plotted on a logarithmic scale.
- **Rates** – the user can also select by checking/un-checking the boxes in the legend which rates are to be displayed on the graph (incidence and/or mortality for males, female or persons all expressed as annual rate per 100,000 males/females/persons). Note, for gender-specific cancers, only data for the relevant gender is presented. Rates in this report are standardised to the World Standard Population (Segi).
- **Graph** – age specific rates for persons by 5-year age group are displayed as lines according to the selections made from above lists.
- **Table** – the table displays all age-specific rates as plotted in the chart.

## Report 5: Cancer Map

**Description:** Thematic maps of Victoria of incidence/mortality rates for selected cancers in different regions coloured to indicate comparison of each region's rate with the state average.

There are two maps available:

- **Cancer map by ICS** – displays data for each of the eight Department of Health and Human Services Integrated Cancer Regions, including three metropolitan regions and five non- metropolitan regions covering the rest of Victoria.
- **Cancer map by PHN** – displays data for each of the six Victorian Primary Health Networks, including three metropolitan regions, and three non-metropolitan regions covering the rest of Victoria.

Each cancer is mapped according to the patient's region of usual residence. For each map, the user can select the:

- **Cancer** – all cancers or a specific type of cancer.
- **Rate** – incidence or mortality rate. Rates in this report are standardised to the World Standard Population (Segi).
- **Sex** – males, females or persons.
- **Period average** – the time period for which the average age-standardised incidence/mortality rates are calculated (3, 5, 10 years or all years since 1982). All periods include the years up to and including the latest available year as shown on the "About" tab.
- **Map** – the colours displayed show, as per the legend, those areas in which the rate is significantly\* below, within or above the state average range.
  - *This is determined using the 95% confidence interval for each region compared with that for the whole state. A region has a rate above the state average if its lower 95% confidence limit is greater than the upper 95% confidence limit for the whole state and conversely for rates below state average. If the 95% confidence interval for the region overlaps that for the whole state its rate is said to lie within state average range. Therefore, regions with rates above or below state average are those with rates significantly different with  $p\text{-value} < 0.05$ .*
- **Table** – the table displays age-standardised rates by region for the selections as displayed on the map.

Please note:

- For gender-specific cancers, only data for the relevant gender is presented.

## Report 6: Leading cancers

**Description:** There are two types of reports available for the leading cancers; a bar chart showing the counts of new cases/deaths for the top 10 cancers, and a pie chart showing the relative proportions of new cases/deaths for each of the top 10 cancers in Victoria or by regions.

The cancers available for display are those that were in the top 10 cancers for all persons in Victoria in the latest available year.

For the 'Leading cancers, Victoria' bar chart, the user can select the:

- **Period** – the year (from 1982 – the latest available year as shown on the “About” tab) for which the number of cases or deaths per are presented.
- **Sort descending by:** choices of count and sex determine the order cancers are displayed on the graph (see note)
- **Count** – new cases or deaths.
- **Sex** – males, females or persons.
- **Cancers** – by checking/un-checking boxes the user can display which of new cases/deaths for males/female/persons are included on the chart.
  - Note that the order of cancers displayed is determined by the sort descending choices (above) and not selections in the legend, e.g. if death and male are selected from the drop-down choices the graph will display cancers in descending order of deaths in Victorian males. Female deaths for the same cancers can be added to the graph using the legend check boxes but will not affect the display order.
- **Graph** – Counts of new cases/deaths are displayed as bars according to the selections made above.
- **Table** – the table displays average annual counts for the same selections as the graph.

For the 'Leading cancers by region' pie chart, the user can select the:

- **Count** – new cases or deaths.
- **Sex** – males, females or persons.
- **Region** – choose from Victoria, the eight regions used in the maps or metropolitan Melbourne/rest of Victoria.
- **Period average** – the time period for which the average new cases/deaths per year are calculated (3, 5, 10 years or all years since 1982). All periods include the years up to and including the latest available year as shown on the “About” tab.
- **Pie chart** – new cases/deaths for each of the top 10 cancers in Victoria are shown as relative proportions according to the selections made above.
- **Table** – the table displays average annual counts for the same selections as the graph.

## Report 7: Cancer prevalence

**Description:** Cancer prevalence at 1<sup>st</sup> January (for years 1983 to 2017) for the top 10 cancers for all persons in Victoria in the latest available year, by sex, region, and time since diagnosis.

Cancer prevalence is defined as being the count of living Victorians, on the 1<sup>st</sup> January of a given year, who have ever had a diagnosis of cancer (since 1982 when the Victorian Cancer Registry became population-based). Prevalence can be sub-divided by the time since the person's cancer diagnosis to provide statistics for different purposes.

For instance, those with a diagnosis within 1 year may still be undergoing initial treatment and follow-up, whilst those diagnosed more than 10 years previously are long-term survivors whose cancer may be in remission, but may be subject to the late effects of their original treatment.

The user can select the:

- **Sex** – males, females or persons.
- **Region** – choose between Victoria, or one of the six Victorian Primary Health Networks.
- **Time since diagnosis** – by checking/un-checking boxes the user can display all cases, cases from people diagnosed <1, 1–5, 5–10, or 10+ years ago, or a combination of these time ranges.

Please note:

- Individuals with multiple primary cancers will be counted more than once in this report i.e. the count is based on tumours rather than persons.
- Regional prevalence figures are based on the region in which the person was resident at the time of their diagnosis. The figures should be considered with this in mind as we are unable to calculate prevalence for a person's current place of residence if they have moved since their diagnosis.

## Report 8: Regional statistics

**Description:** Two summary tables showing counts of new cases and deaths by age group, sex and cancer type by region.

The cancers available for display are those that were in the top 10 cancers for all persons in Victoria in the latest available year.

The tables show (1) annual new cases and deaths by sex and age group and (2) annual new cases and deaths by sex and leading cancers for a specified region and time period.

The user can select the:

- **Region** – choose from Victoria, the eight regions used in the maps or metropolitan Melbourne/rest of Victoria. Region is the patient's region of usual residence at time of diagnosis/death.
- **Period average** – the time period for which the average new cases/deaths per year are calculated (3, 5, 10 years).
- **Table** – the table displays average annual counts of new cases and deaths in males, females and persons for the same selections as the graph.

## Report 9: Cancer in migrants

**Description:** Graph showing cancer incidence/mortality rates in Australian-born Victorians compared to those for migrants by their region of birth.

The user can select the:

- **Cancer** – choose from all cancers or one of the leading cancers.
- **Period average** – the time period for which the average new cases/deaths per year are calculated (3, 5, 10 years). All periods include the years up to and including the latest available year as shown on the "About" tab.
- **Rate** – incidence or mortality rates. Rates in this report are age-standardised to the World Standard Population (Segi).
- **Graph** – the graph displays, for persons born in Australia & NZ and Victorian migrants from ten worldwide regions, the annual age-standardised incidence/mortality rate (black spot) with its 95% confidence interval (red bar). The confidence intervals are wide for regions for

which there are relatively fewer cases/deaths. The rates for migrants from a region are significantly higher or lower (with p-value <0.05) than those for the Australian-born only if their confidence intervals do not overlap (and are higher/lower than the Australian-born confidence interval).

- **Table** – the table displays average annual counts of new cases and deaths and age-standardised rates (with 95% confidence limits) for the same selections as the graph.

## Reports by DHHS tumour stream

Reports 5 – 8 are also available using the DHHS tumour streams. The DHHS tumour streams differ from the VCR cancer groupings in that they group cancers according to the organ system. All these reports can be customised to show data for specific regions of Victoria (by ICS or PHN) and are useful for reporting to the Department of Health and Human Services. The selection criteria for each report is identical to the description provided in the preceding sections.

## Appendix 1: Summary of Major Cancer Groupings Used in Online VCR Data Reports (solid tumours)

VCR-defined Detailed Groups		VCR-defined Main Groups		DHHS Tumour Streams	
Site Group Label	ICD10	Site Group Label	ICD10	Site Group Label	ICD10
Oral cavity & pharynx	C01 - C14	Head & neck	C00 - C14 & C30 - C32	Head & neck	C00 - C14 & C30 - C32
-	-				
Oesophagus	C15	Upper GI	C15 - C17 & C22 - C25	UGI	C15 - C17 & C22 - C26
Stomach	C16				
-	-				
Liver	C22				
Gallbladder	C23				
-	-				
Pancreas	C25	-	-	-	-
-	-	-	-	-	-
Colon	C18	Bowel	C18 - C20	Colorectal	C18 - C21
Rectum	C19 & C20				
-	-	-	-	-	-
Lung	C33	Respiratory	C33, C34 & C45	Lung	C33, C34, C38, C39 & C45
-	-				
Mesothelioma	C45	Respiratory ctd.	C33, C34 & C45		
Melanoma	C43	Melanoma	C43		
Other skin	C44	-	-	-	-
Soft tissue	C47 & C49	-	-	-	-
Breast (female only)	C50	Gynaecological	C50 - C58	Breast	C50
-	-			Gynaecological	C51 - C58
Cervix	C53				
Uterus	C54 & C55				
Ovary	C56				
-	-	-	-	-	-
Prostate	C61	Prostate	C61	Genito-urinary	C60 - C68
Testis	C62	-	-		
-	-	-	-		
Kidney	C64	Urinary system	C64 - C68		
Bladder & urinary tract	C65 - C68				
-	-	-	-	CNS	C69 - C72
Brain & CNS	C70 - C72	Brain & CNS	C70 - C72		
-	-	-	-	Endocrine glands & thyroid	C37 & C73 - C75
Thyroid	C73	-	-		
-	-	-	-		
Unknown primary	C80	-	-	-	-

## Appendix 2: Summary of Haematological Cancer Groupings Used in Online VCR Data Reports:

VCR-defined Detailed Groups	
Site Group Label	Morphology Code
Hodgkin Lymphoma	9650 - 9653, 9659, 9663
CLL/small lymphocytic lymphoma	9596 - 9597, 9670, 9671, 9673, 9678 - 9680, 9684, 9687 - 9691, 9695, 9698, 9699, 9712, 9731 - 9734, 9761, 9811 - 9816, 9823, 9826, 9833, 9940
Diffuse large B-cell lymphoma	9700 - 9702, 9705, 9708, 9709, 9714, 9716 - 9719, 9827, 9831, 9834
Follicular lymphoma	9727, 9837, 9930
Plasma cell disorders	9591, 9820, 9832
Other mature B-cell neoplasms	9590
Mature T- and NK--cell neoplasms	9805, 9840, 9861, 9866, 9867, 9871 - 9874, 9891, 9895 - 9897, 9910, 9920, 9931
Acute lymphoblastic leukaemia	9863, 9875
Acute myeloid leukaemia	9869, 9950, 9960 - 9962, 9964
Chronic myeloid leukaemia	9980, 9982, 9983, 9985, 9986, 9989
Other chronic myeloproliferative disease	9876, 9945, 9946, 9975
Myelodysplastic syndromes	9860
ABCR13 Myelodysplastic/ myeloproliferative diseases)	9800, 9801, 9806, 9808

VCR-defined Main Groups	
Site Group Label	ICD10
Hodgkin Lymphoma	C81
Non-Hodgkin lymphoma	C82 - C87
Multiple myeloma	C90
Leukaemia	C91 - C95
Myeloproliferative/ myelodysplastic syndromes	D45 - D47

DHHS Tumour Streams	
Site Group Label	ICD10
Haematological	C81 - C85, C88 - C96

Note: The VCR-defined Detailed Groups are described using ICD morphology codes, rather than ICD-10.