CANCER IN AUSTRALIA

in brief

2014

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Contents

Acknowledgments

Introduction

Cancer is a major cause of illness in Australia and has a substantial social and economic impact on individuals, families and the community. In 2014, it is estimated that 123,920 people will be diagnosed with cancer and 45,780 people will die from cancer. Findings from recent global burden of disease studies show that cancer contributed between 16% and 19% of the total disease burden in Australia (The Lancet 2012; WHO 2014).

This booklet provides highlights from the full report *Cancer in Australia: an overview 2014*. The report is part of a series of national statistical reports on cancer produced by the Australian Institute of Health and Welfare with support from state and territory members of the Australasian Association of Cancer Registries. As a short version, this booklet presents key findings from the main report. Refer to the full report for details about methods and technical information.

Terminology used in this report

Incidence rate: the number of new cancers diagnosed per 100,000 people during a year. All incidence rates in this report are age-standardised to the Australian population as at 30 June 2001, except for rates by age groups, which are age-specific.

Hospitalisation (or separation): refers to either an episode of care beginning with admission and ending with discharge, transfer or death, or one that is defined by a change in care type, such as from acute care to rehabilitation.

Mortality rate: the number of deaths per 100,000 people for which the underlying cause was cancer. All mortality rates in this report are age-standardised to the Australian population as at 30 June 2001, except for rates by age groups, which are age-specific.

Principal diagnosis: is the diagnosis established after study to be chiefly responsible for occasioning the patient's episode of admitted patient care.

Relative survival: the average survival experience. It compares the survival of people diagnosed with cancer with that experienced by people in the general population of equivalent age and sex in the same calendar year.

The main report *Cancer in Australia: an overview, 2014,* is available free at <www.aihw.gov.au>.

Defining cancer

Cancer is a term used for diseases in which abnormal cells divide without control and can invade nearby tissues. Cancer cells can also spread to other parts of the body through the blood and lymph systems.

Cancers can develop from most cell types and are distinguished from one another by the location in the body where the disease began (for example lung) or by the cell type involved (known as histology). There are several main cell types:

Carcinoma—a cancer that begins in the skin or in tissues that line or cover internal organs.

Sarcoma—a cancer that begins in bone, cartilage, fat, muscle, blood vessels, or other connective or supportive tissue.

Leukaemia—a cancer that begins in blood-forming tissue, such as the bone marrow, and causes large numbers of abnormal blood cells to be produced and enter the blood.

Lymphoma and multiple myeloma—a cancer that begin in the cells of the immune system.

Central nervous system cancers—a cancer that begin in the tissues of the brain and spinal cord (National Cancer Institute 2014).

The beginning of cancer
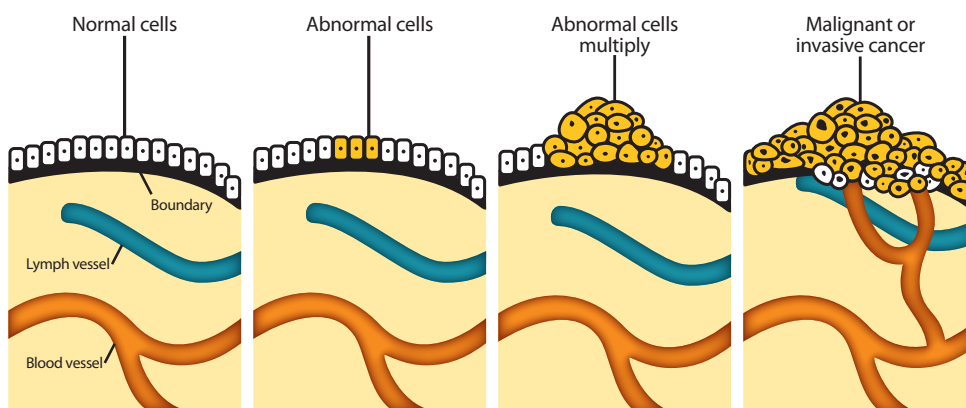
Source: Adapted from Cancer Council image (Cancer Council Queensland 2010).

Find out more: Chapter 1 in *Cancer in Australia: an overview, 2014.*

Early detection and prevention

Population-based screening

Population-based screening is an organised, systematic and integrated process of testing for signs of cancer or pre-cancerous conditions in asymptomatic populations.

Australia currently has 3 population-based cancer screening programs: BreastScreen Australia, the National Cervical Screening Program and the National Bowel Cancer Screening Program.

Program	Participation rate	Abnormalities detected
BreastScreen (2011–2012)	55% 0 50 100	• 104 invasive breast cancers per 10,000 women (aged 50–69) for first time screen. • 44 invasive breast cancers per 10,000 women (aged 50–69) for subsequent screen.
National Cervical Screening Program (2011–2012)	58% 0 50 100	• 8 pre-cancerous abnormalities per 1,000 women screened.
National Bowel Cancer Screening Program (2012–2013)	33% 0 50 100	• 32 confirmed or suspected bowel cancers per 1,000 people followed up by colonoscopy. • 57 advanced pre-cancerous tumours per 1,000 people followed up by colonoscopy.

Other cancer screening and testing

Some Australians receive cancer screening and testing that is not provided through organised screening programs and therefore are not included in these statistics. This could include private mammograms, breast magnetic resonance imaging (MRI) scans, colonoscopies, computerised tomography (CT) and prostate-specific antigen (PSA) tests.

Find out more: Chapter 2 in *Cancer in Australia: an overview, 2014.*

Risk factors

A risk factor is any factor associated with an increased likelihood of a person developing a health disorder or health condition. Understanding what causes cancer is essential in establishing processes and policies designed to successfully prevent, detect and treat the disease. For most cancers, the causes are not fully understood. However, some factors that place individuals at a greater risk are outlined below (IARC 2014; WCRF & AICR 2007).

Smoking/passive smoking and smokeless tobacco use
Cancers associated with this risk factor include:

- bladder
- bone marrow
- cervix
- kidney
- larynx
- liver
- lung
- nasal cavity
- nasal sinuses
- oral cavity
- oesophagus
- pancreas
- pharynx
- stomach

Alcohol consumption
Cancers associated with this risk factor include:

- colon and rectum
- breast (females)
- larynx
- liver
- oesophagus
- oral cavity
- pharynx

Diet
Cancers associated with this risk factor include:

- colon and rectum
- breast
- kidney
- oesophagus
- pancreas
- prostate
- stomach
- uterine

Obesity and physical inactivity
Cancers associated with this risk factor include:

- colon and rectum
- breast (females)
- endometrium
- gallbladder
- kidney
- oesophagus
- ovary
- pancreas

Chronic infections
Cancers associated with this risk factor include:

- bladder
- blood or bone marrow
- cervix
- gallbladder
- liver
- lung
- lymphatic system
- nasopharynx and oropharynx
- oral cavity
- stomach

Family history and genetic susceptibility
Cancers associated with this risk factor include:

- bladder
- blood or bone marrow
- breast
- colon and rectum
- gallbladder
- ovary
- pancreas
- prostate
- testis
- thyroid

Occupational exposures
Cancers associated with this risk factor include:

- bladder
- blood or bone marrow
- kidney
- liver
- lung
- lymphatic system
- mesothelium
- nasal cavity
- nasopharynx
- non-melanoma of the skin
- oesophagus
- oral cavity
- pharynx
- stomach

Sunlight
Cancers associated with this risk factor include:

- melanoma of the skin
- non-melanoma skin cancer

Radiation
Cancers associated with this risk factor include:

- breast
- blood or bone marrow
- lung
- thyroid

Medical and iatrogenic factors
Cancers associated with this risk factor include:

- bladder
- colon and rectum
- kidney
- liver
- lung
- mesothelium
- oesophagus
- pancreas

Reproductive and hormonal factors
Cancers associated with this risk factor include:

- breast
- endometrium
- ovary
- testis

Environmental pollution
Cancers associated with this risk factor include:

- bladder
- kidney
- liver
- lung
- skin
- stomach

Find out more: Chapter 2 in *Cancer in Australia: an overview, 2014.*

New cancer cases

In 2014, it is estimated that 123,920 new cancer cases will be diagnosed in Australia (excluding basal and squamous cell carcinomas of the skin), which is a rate of 467 per 100,000 persons.

Males are estimated to account for more than half (55%) of new cancer cases diagnosed.

| 540 cases per 100,000 | 406 cases per 100,000 |

People aged 65 and over are estimated to account for nearly 6 in 10 (58%) new cancer cases diagnosed. Further breakdowns by age can be seen in the life stage sections on pages 16–19.

0–64 years | 258 cases per 100,000 | 2,089 cases per 100,000 | **65 years and older**

In 2014, it is estimated that the number of new cancer cases diagnosed will be 2.6 times as high as that in 1982. This increasing trend can be attributed to the rise in the number of cases of prostate cancer, breast cancer in females and bowel cancer. Improved diagnoses through population-based screening programs and improvements in technologies and techniques used for identifying and diagnosing cancer, as well as Australia's ageing population, have contributed to these increases.

Incidence of all cancers combined, Australia, 1982–2014

Number of cases **Rate (per 100,000)**
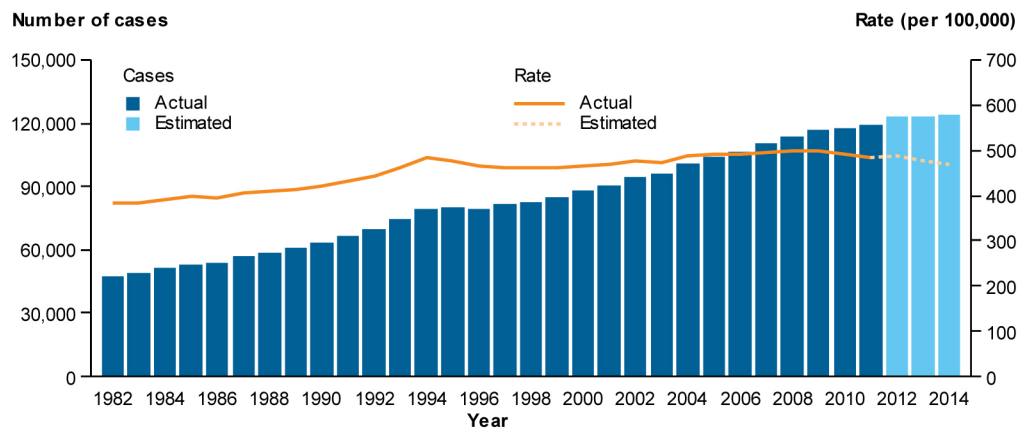
Notes

1. The graph presents actual data for 1982–2011 and estimates for 2012–2014. Estimates are based on 2002–2011 incidence data.
2. Data pertain to cancers coded in ICD-10 as C00–C97, D45, D46, D47.1 and D47.3 with the exception of those C44 codes that indicate a basal or squamous cell carcinoma of the skin.
3. The rates were age-standardised to the Australian population as at 30 June 2001.

Source: AIHW Australian Cancer Database 2011.

In 2014, it is estimated that the top five most common cancers for:

- males (prostate, colorectal, melanoma of the skin, lung and head and neck cancers) account for just under two-thirds (64%) of all cancers diagnosed in males

- females (breast, colorectal, melanoma of the skin, lung and uterine cancers) account for just under two-thirds (63%) of all cancers diagnosed in females.

Estimated five most commonly diagnosed cancers, by sex, 2014

Males

	Number of cases
Prostate	17,050
Colorectal	9,290
Melanoma of the skin	7,440
Lung	6,860
Head and neck	3,260

Females

	Number of cases
Breast	15,270
Colorectal	7,340
Melanoma of the skin	5,210
Lung	4,720
Uterus	2,490
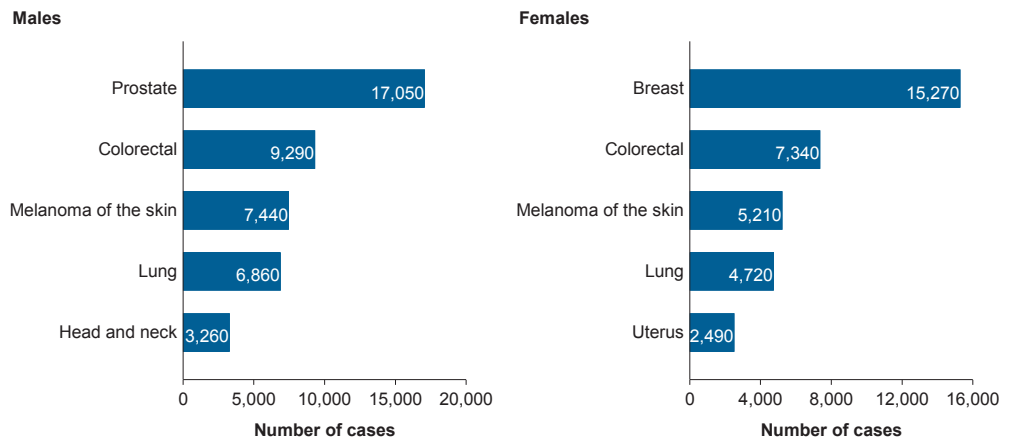
Note: The graph presents estimates for 2014. Estimates are based on 2002–2011 incidence data.
Source: AIHW Australian Cancer Database 2011.

Find out more: Chapter 3 in *Cancer in Australia: an overview, 2014.*

Hospitalisations

In 2012–13, there were 914,993 cancer-related hospitalisations. Cancer was responsible for 1 in 10 (10%) hospitalisations in Australia.

Just over half (52%) of cancer-related hospitalisations were for males.

401 hospitalisations per 10,000	343 hospitalisations per 10,000

Cancer-related hospitalisations were more common in older age groups.

0–64 years

221 hospitalisations per 10,000	1,505 hospitalisations per 10,000

65 years and older

Reasons for being hospitalised for cancer include a:

• principal diagnosis of cancer
• principal diagnosis of a cancer-related treatment or service (such as chemotherapy).

Principal diagnosis of cancer:	Principal diagnosis of cancer-related treatment or service:
Accounted for 45% of cancer-related hospitalisations	Accounted for 55% of cancer-related hospitalisations
165 hospitalisations per 10,000 people	202 hospitalisations per 10,000 people
52% of hospitalisations where the principal diagnosis was cancer were overnight stays	99% of hospitalisations where the principal diagnosis was a cancer-related treatment or service were same-day services
7.5 days — average length of stay for overnight stays	2.2 days — average length of stay for overnight stays

When looking at the reason for a cancer hospitalisation:

• a principal diagnosis of cancer can be disaggregated by the *type of cancer*

• a principal diagnosis of a cancer-related treatment or service can be disaggregated by the *type of service*.

In 2012–13, the most common reason for a cancer hospitalisation for:

• a principal diagnosis of cancer is non-melanoma skin cancer

• a principal diagnosis of a cancer-related treatment or service is chemotherapy.

Five most common principal diagnosis and cancer-related treatments or services for cancer, 2012–13

Principal diagnosis

Type	Number of hospitalisations
Non-melanoma of the skin	99,300
Secondary site	41,080
Prostate	35,740
Colorectal	28,213
Breast	25,117

Cancer-related treatment or service

Type	Number of hospitalisations
Chemotherapy	374,824
Intestinal tract screening	54,480
Follow-up after surgery	42,110
Management of vascular access device	5,838
Follow-up examination	4,758

Note: Secondary site refers to C77–C79, chemotherapy to Z51.1, intestinal tract screening to Z12.1, follow-up after surgery to Z08.0, management of vascular access device to Z45.2 and follow-up examination to Z08.7.

Source: AIHW National Hospital Morbidity Database.

Find out more: Chapter 4 in *Cancer in Australia: an overview, 2014*.

Survival

In 2007–2011, five-year relative survival was 67% for all cancers combined. This means that people diagnosed with cancer had a 67% chance of surviving for at least 5 years compared with their counterparts in the general population.

Females had a slightly higher 5-year relative survival rate than males.

5-year relative survival 66%

5-year relative survival 68%

Five-year relative survival was highest for those in younger age groups.

0–24 years   5-year relative survival 86%

5-year relative survival 57%   **65 years and older**

Five-year relative survival for people diagnosed with cancer has increased over time from 46% in 1982–1986 to 67% in 2007–2011.

Five-year relative survival for all cancers combined, 1982–1986 to 2007–2011

5-year relative survival

All cancers combined
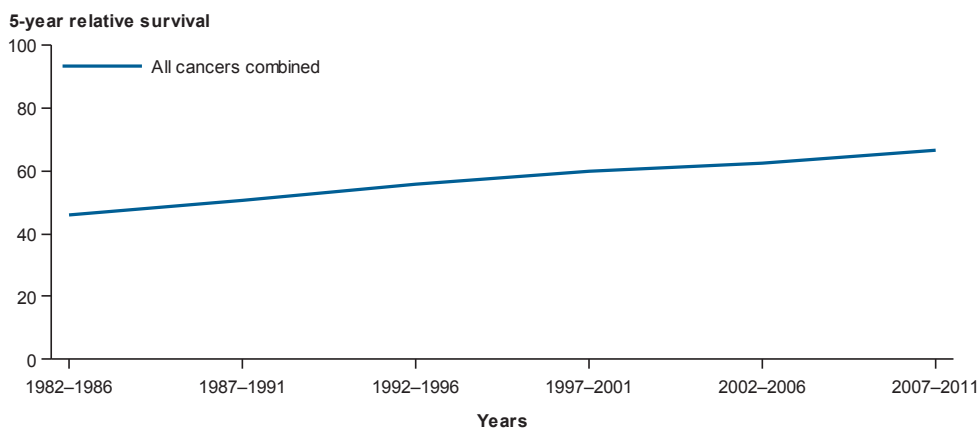
Source: AIHW Australian Cancer Database 2011.

Five-year relative survival is presented for the top five most commonly diagnosed cancers in males and females:

- for males, five-year relative survival was high for prostate cancer (93%) and melanoma of the skin (88%). Of the top five most commonly diagnosed cancers, lung cancer had the lowest survival (13%)

- for females, five-year relative survival was high for melanoma of the skin (94%) and breast cancer (90%). Of the top five most commonly diagnosed cancers, lung cancer had the lowest survival (17%).

Five-year relative survival for five most commonly diagnosed cancers, by sex, 2007–2011

Males

Cancer	5-year relative survival
Prostate	93
Colorectal	66
Melanoma of the skin	88
Lung	13
Head and neck	67

Females

Cancer	5-year relative survival
Breast	90
Colorectal	67
Melanoma of the skin	94
Lung	17
Uterus	83
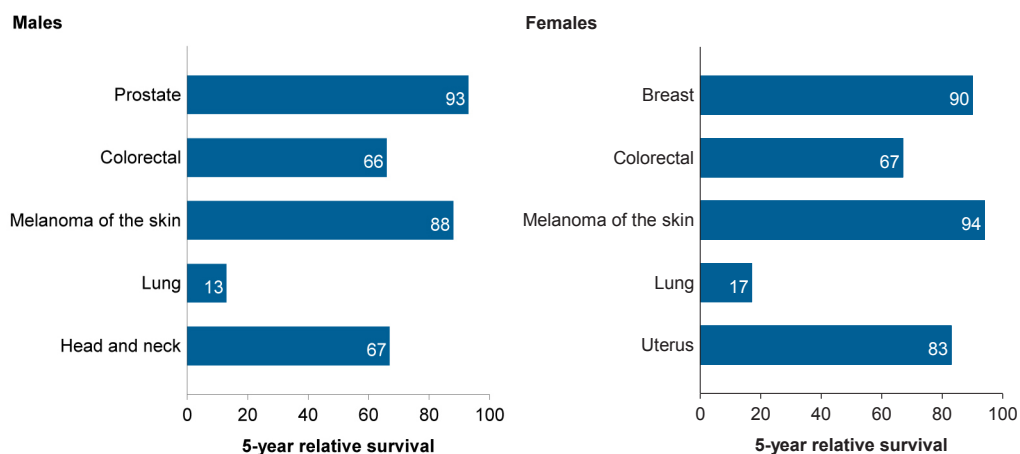
Source: AIHW Australian Cancer Database 2011.

Find out more: Chapter 5 in *Cancer in Australia: an overview, 2014*.

Prevalence

Prevalence, or survivorship population, refers to the number of people alive who have ever been diagnosed with cancer. Survivorship is increasingly recognised as beginning at diagnosis and continuing long after treatment ends. It is more than simply not dying from cancer, and focuses on living with, and after, a cancer diagnosis.

At the end of 2009, 370,474 people were alive who had been diagnosed with cancer in the previous 5 years and 861,057 people alive who had been diagnosed with cancer in the previous 28 years.

Five-year prevalence was higher in males than in females.

206,437 diagnosed in previous five years	164,037 diagnosed in previous five years

Five-year prevalence was higher among people aged 65 years and over than in younger age groups.

0–64 years

170,248 diagnosed in previous five years	200,226 diagnosed in previous five years

65 years and older

At the end of 2009, the cancers with the highest 5-year prevalence for:

• males were prostate cancer, melanoma of the skin, colorectal cancer, non-Hodgkin lymphoma and lung cancer

• females were breast cancer, colorectal cancer, melanoma of the skin, uterine cancer and non-Hodgkin lymphoma.

Five-year prevalence for five most prevalent cancers, by sex, 2009

Males

Cancer	5-year prevalence
Prostate	86,207
Melanoma of the skin	27,402
Colorectal	26,700
NHL	8,440
Lung	7,782

Females

Cancer	5-year prevalence
Breast	58,955
Colorectal	21,896
Melanoma of the skin	20,962
Uterus	8,296
NHL	6,851
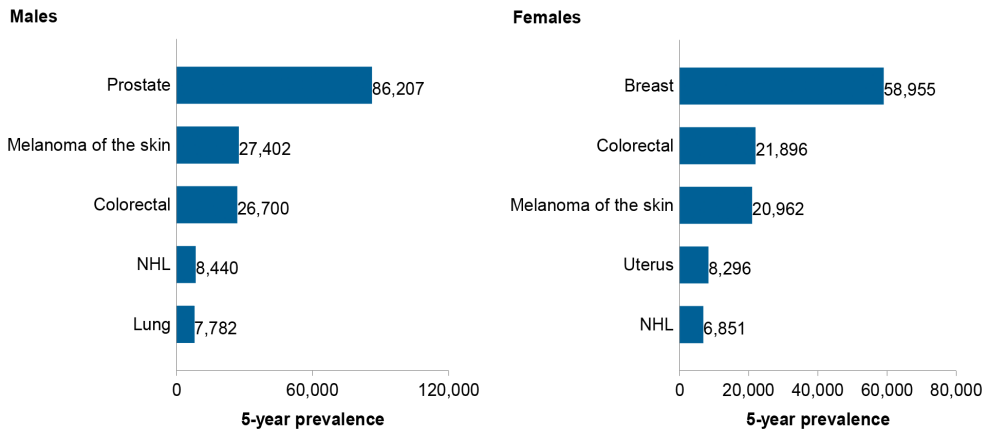
Note: NHL stands for non-Hodgkin lymphoma.
Source: AIHW Australian Cancer Database 2011.

Find out more: Chapter 6 in *Cancer in Australia: an overview, 2014*.

Deaths

In 2014, it is estimated that there will be 45,780 deaths due to all cancers combined, which is a rate of 168 deaths per 100,000 people. Cancer was the second leading cause of death according to the most recent actual data (2012).

Males are estimated to account for more than half (57%) of cancer related deaths.

212 deaths per 100,000	134 deaths per 100,000

People aged 65 and over are estimated to account for more than three quarters (77%) of cancer-related deaths.

0–64 years	53 deaths per 100,000	1,022 deaths per 100,000	**65 years and older**

Between 1982 and 2014, the number of deaths from all cancers combined increased, however, over the same period the rate decreased.

Deaths from all cancers combined, Australia, 1982–2014
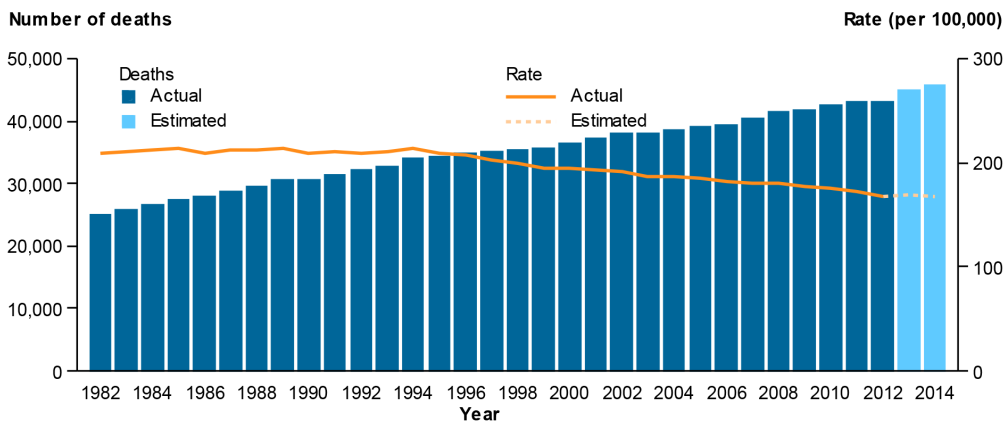
Number of deaths

Rate (per 100,000)

Deaths
Actual
Estimated

Rate
Actual
Estimated

Notes

1. The 2014 estimates are based on 2002–2012 mortality data. The estimates for males and females may not add to the estimates for persons due to rounding.
2. Deaths registered in 2010 and earlier are based on the final version of cause of death data; deaths registered in 2011 and 2012 are based on revised and preliminary versions, respectively and are subject to further revision by the ABS.
3. The rates were age-standardised to the Australian population as at 30 June 2001.
4. Data pertain to cancers coded in ICD-10 as C00–C97, D45, D46, D47.1 and D47.3.

Source: AIHW National Mortality Database.

The five leading causes of cancer death for:

- males (lung, prostate, colorectal, pancreas and unknown primary site) account for around half (51%) of all cancer deaths in males

- females (lung, breast, colorectal, pancreas and unknown primary site) account for over half (55%) of all cancer deaths in females.

Estimated five most common causes of death from cancer, by sex, 2014
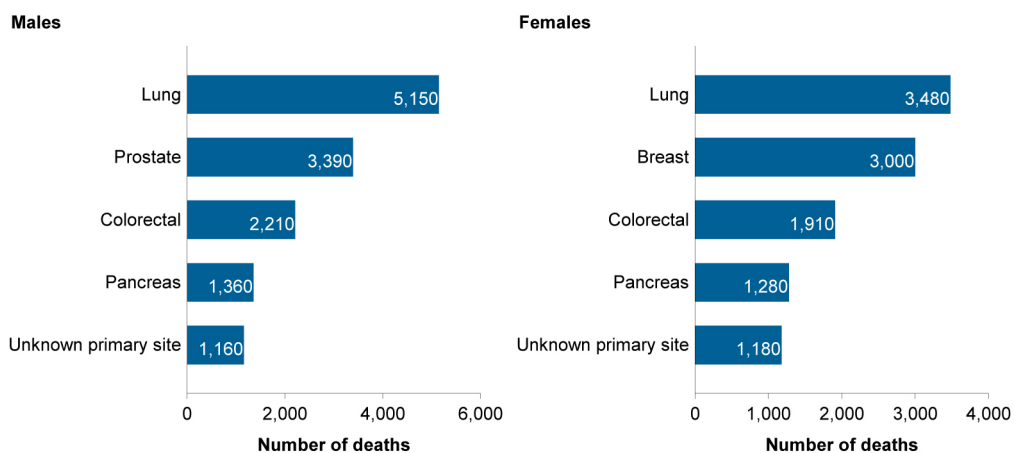
Males

Cause	Number of deaths
Lung	5,150
Prostate	3,390
Colorectal	2,210
Pancreas	1,360
Unknown primary site	1,160

Females

Cause	Number of deaths
Lung	3,480
Breast	3,000
Colorectal	1,910
Pancreas	1,280
Unknown primary site	1,180

Notes

1. The 2014 estimates are based on 2002–2012 mortality data. The estimates for males and females may not add to the estimates for persons due to rounding.

2. Deaths registered in 2010 and earlier are based on the final version of cause of death data; deaths registered in 2011 and 2012 are based on revised and preliminary versions, respectively and are subject to further revision by the ABS.

Source: AIHW National Mortality Database.

Find out more: Chapter 7 in *Cancer in Australia: an overview, 2014.*

Life stage: 0–24 years

Cancer is rare among people aged 0–24.

For people aged 0–24, it is estimated that in 2014 there will be 1,540 new cases of cancer and 180 cancer-related deaths. While the number of cancer-related deaths is low compared with that for other age groups, cancer is the leading cause of death for people in this age group in the most recent actual data (2012) (AIHW 2014b).

People aged 0–24 tend to be diagnosed with and die from different types of cancers than older people. Leukaemia, brain cancer and lymphoma are common cancers among people aged 0–24.
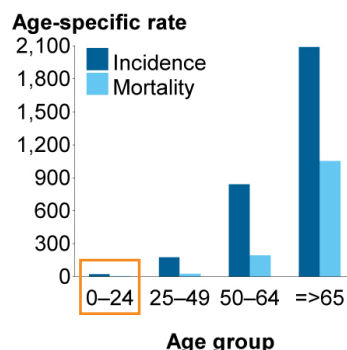
Age-specific rate

Estimated five most commonly diagnosed cancers and estimated five most common causes of death from cancer, people aged 0–24, 2014

New cases

	Number of cases
Leukaemia	315
Lymphoma	255
Brain	135
Melanoma of the skin	130
Testis	120

Deaths

	Number of deaths
Brain	40
Leukaemia	40
Bone	25
Other soft tissue	15
Lymphoma	10

Notes

1. The graph presents estimates for 2014. Incidence estimates are based on 2002–2011 incidence data. Mortality estimates are based on 2002–2012 mortality data. The mortality estimates by age may not add to the total due to rounding.

2. Deaths registered in 2010 and earlier are based on the final version of cause of death data; deaths registered in 2011 and 2012 are based on revised and preliminary versions, respectively and are subject to further revision by the ABS.

Sources: AIHW Australian Cancer Database 2011; AIHW National Mortality Database.

Find out more: Chapter 8 in *Cancer in Australia: an overview, 2014.*

Life stage: 25–49 years

Cancer is not common among people aged 25–49.

For people aged 25–49, it is estimated that in 2014 there will be 14,590 new cases of cancer and 2,140 cancer-related deaths.

For people aged 25–49, breast cancer is the most commonly diagnosed cancer and leading cause of death from cancer. Other common cancers include colorectal cancer and melanoma of the skin.
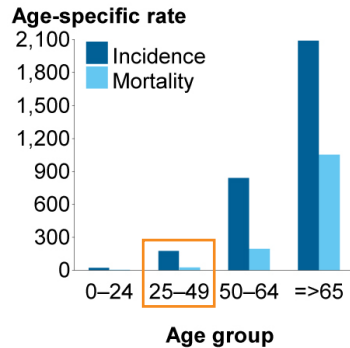
Age-specific rate

Estimated five most commonly diagnosed cancers and estimated five most common causes of death from cancer, people aged 25–49, 2014

New cases

	Number of cases
Breast (females)	3,300
Melanoma of the skin	2,560
Colorectal	1,090
Thyroid	1,030
Lymphoma	865

Deaths

	Number of deaths
Breast (females)	405
Lung	255
Colorectal	210
Brain	190
Melanoma of the skin	160

Notes

1. The graph presents estimates for 2014. Incidence estimates are based on 2002–2011 incidence data. Mortality estimates are based on 2002–2012 mortality data. The mortality estimates by age may not add to the total due to rounding.

2. Deaths registered in 2010 and earlier are based on the final version of cause of death data; deaths registered in 2011 and 2012 are based on revised and preliminary versions, respectively and are subject to further revision by the ABS.

Sources: AIHW Australian Cancer Database 2011; AIHW National Mortality Database.

Find out more: Chapter 8 in *Cancer in Australia: an overview, 2014.*

Life stage: 50–64 years
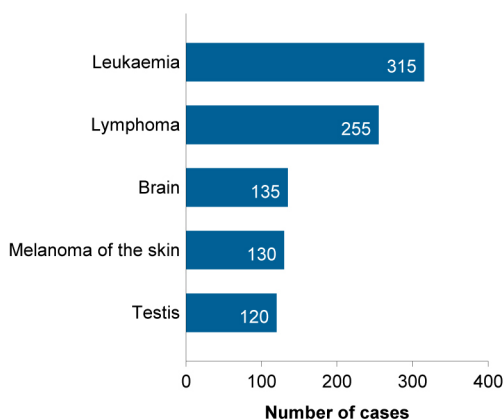
Cancer is more common in people aged 50–64. National breast and bowel screening programs are targeted at those aged 50 and over, which could have an impact on the number of cancers diagnosed in this age group.

For people aged 50–64, it is estimated that in 2014 there will be 35,720 new cases of cancer and 8,290 cancer-related deaths.

For people aged 50–64, prostate cancer is the most commonly diagnosed cancer, followed by breast and colorectal cancer. This might be due to targeted screening programs for breast and colorectal cancer and prostate cancer testing. The leading cause of death from cancer for people aged 50–64 was lung, followed by breast and colorectal cancer.
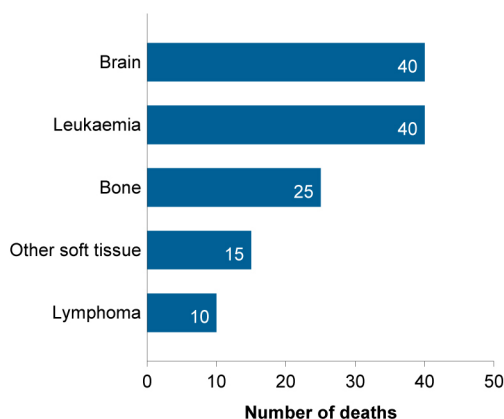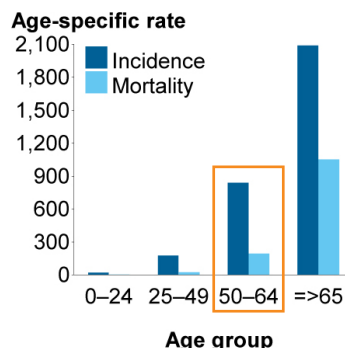
Age-specific rate

Incidence
Mortality

Age group

Estimated five most commonly diagnosed cancers and estimated five most common causes of death from cancer, people aged 50–64, 2014

New cases
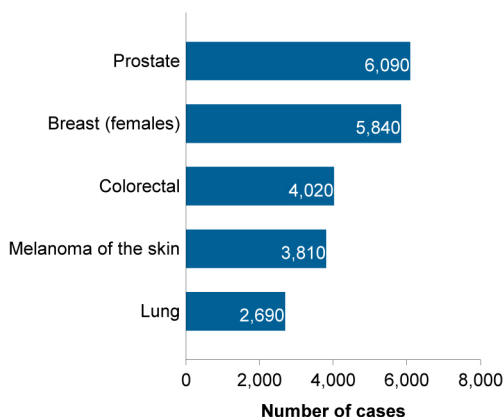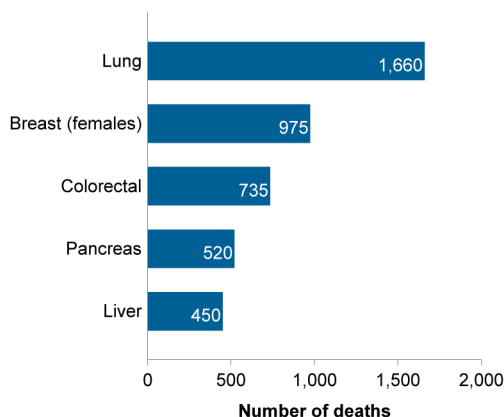
Cancer	Number of cases
Prostate	6,090
Breast (females)	5,840
Colorectal	4,020
Melanoma of the skin	3,810
Lung	2,690

Deaths

Cancer	Number of deaths
Lung	1,660
Breast (females)	975
Colorectal	735
Pancreas	520
Liver	450

Notes

1. The graph presents estimates for 2014. Incidence estimates are based on 2002–2011 incidence data. Mortality estimates are based on 2002–2012 mortality data. The mortality estimates by age may not add to the total due to rounding.

2. Deaths registered in 2010 and earlier are based on the final version of cause of death data; deaths registered in 2011 and 2012 are based on revised and preliminary versions, respectively and are subject to further revision by the ABS.

Sources: AIHW Australian Cancer Database 2011; AIHW National Mortality Database.

Find out more: Chapter 8 in *Cancer in Australia: an overview, 2014*.
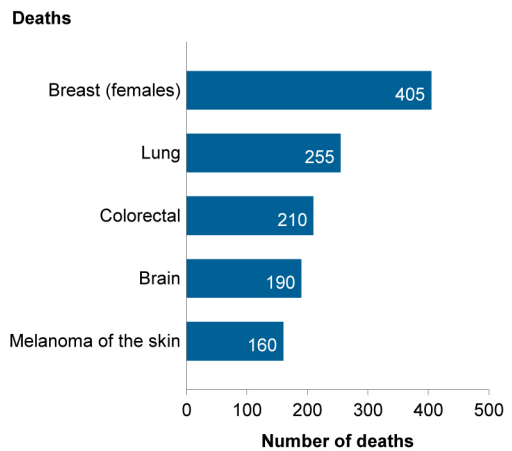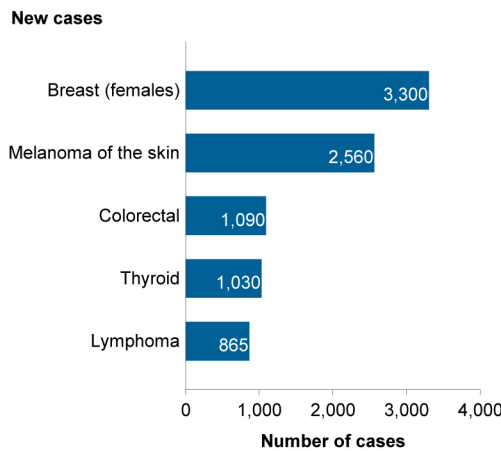
Life stage: 65 years and older

Cancer incidence and mortality rates are highest for people aged 65 and over. Population-based screening programs are targeted at people in this age group, which could have an impact on the number of cancers diagnosed and result in earlier diagnosis. Further, developments in treatment and new technologies are leading to an increase in survival of people in this age group.

For people aged 65 and over, it is estimated that in 2014 there will be 72,070 new cases of cancer and 36,220 cancer-related deaths.
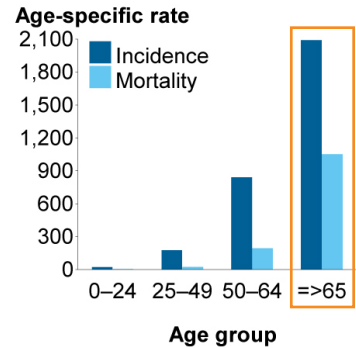
For people aged 65 and over, colorectal cancer is the most commonly diagnosed cancer, followed by prostate, lung and breast cancer. The leading cause of death from cancer for people aged 65 and over is lung cancer, followed by prostate and colorectal cancer. A similar pattern is seen for people aged 85 and over.

Age-specific rate

Estimated five most commonly diagnosed cancers and estimated five most common causes of death from cancer, people aged 65 years and older, 2014

New cases

Colorectal	11,490
Prostate	10,520
Lung	8,440
Breast (females)	6,120
Melanoma of the skin	6,150

Deaths

Lung	6,860
Prostate	3,310
Colorectal	3,220
Pancreas	2,130
Breast (females)	1,990

Notes

1. The graph presents estimates for 2014. Incidence estimates are based on 2002–2011 incidence data. Mortality estimates are based on 2002–2012 mortality data. The mortality estimates by age may not add to the total due to rounding.
2. Deaths registered in 2010 and earlier are based on the final version of cause of death data; deaths registered in 2011 and 2012 are based on revised and preliminary versions, respectively and are subject to further revision by the ABS.

Sources: AIHW Australian Cancer Database 2011; AIHW National Mortality Database.

Find out more: Chapter 8 in *Cancer in Australia: an overview, 2014*.

Key groups: Aboriginal and Torres Strait Islander Australians

New cancer cases

Between 2005 and 2009, Indigenous Australians were less likely to be diagnosed with all cancers combined than non-Indigenous Australians. However, for a number of cancer types, Indigenous Australians had higher incidence rates.

	Indigenous	Non-Indigenous

ALL CANCERS COMBINED | 420.7 cases per 100,000 | 442.5 cases per 100,000

Compared to non-Indigenous Australians, Indigenous Australians are:

LIVER CANCER
2.8 times more likely to be diagnosed with liver cancer | 14.9 cases per 100,000 | 5.4 cases per 100,000

CERVICAL CANCER
2.3 times more likely to be diagnosed with cervical cancer | 15.5 cases per 100,000 | 6.6 cases per 100,000

CANCER OF UNKNOWN PRIMARY SITE
1.8 times more likely to be diagnosed with cancer of unknown primary site | 20.2 cases per 100,000 | 11.3 cases per 100,000

LUNG CANCER
1.7 times more likely to be diagnosed with lung cancer | 74.0 cases per 100,000 | 43.3 cases per 100,000

UTERINE CANCER
1.6 times more likely to be diagnosed with uterine cancer | 24.7 cases per 100,000 | 15.2 cases per 100,000

Many factors contribute to the difference in cancer incidence rates, including:

- higher rates of smoking
- higher rates of short-term high-risk alcohol consumption
- low level of participation in cervical screening programs and greater exposure to risk factors associated with cervical cancer (Condon 2004; Condon et al. 2005; Roder 2005; Garland et al 2011)
- the shorter life expectancy of Indigenous Australians may contribute to the lower diagnosis rate of cancers that affect older people.

Deaths

Between 2008 and 2012, Indigenous Australians were 1.3 times more likely to die from all cancers combined than non-Indigenous Australians.

	Indigenous	Non-Indigenous

ALL CANCERS COMBINED

220.9 deaths per 100,000	172.0 deaths per 100,000

Compared to non-Indigenous Australians, Indigenous Australians are:

CERVICAL CANCER

3.4 times more likely to die from cervical cancer

6.5 deaths per 100,000	1.9 deaths per 100,000

LIVER CANCER

3.0 times more likely to die from liver cancer

16.2 deaths per 100,000	5.4 deaths per 100,000

LUNG CANCER

1.7 times more likely to die from lung cancer

56.4 deaths per 100,000	33.2 deaths per 100,000

CANCER OF UNKNOWN PRIMARY SITE

1.5 times more likely to die from cancer of unknown site cancer

13.8 deaths per 100,000	9.2 deaths per 100,000

BREAST CANCER (FEMALES)

1.1 times more likely to die from breast cancer

24.1 deaths per 100,000	21.2 deaths per 100,000

The higher mortality rate for Indigenous Australians may be partly explained by:

- a greater likelihood of being diagnosed with cancers with poor survival (for example, lung cancer and cancer of unknown primary site) (Condon et al. 2003; Threlfall & Thompson 2009)

- being diagnosed at an advanced stage (AIHW 2014a; Cunningham et al. 2008).

Find out more: Chapter 8 in *Cancer in Australia: an overview, 2014.*

KEY GROUPS: ABORIGINAL AND TORRES STRAIT ISLANDER AUSTRALIANS

Key groups: Remoteness areas

New cancer cases

Between 2005 and 2009, the age-standardised incidence rate was highest in *Inner Regional* areas and lowest in *Very Remote* areas.

	MAJOR CITIES	INNER REGIONAL	OUTER REGIONAL	REMOTE	VERY REMOTE
ALL CANCERS COMBINED	478.4 cases per 100,000	540.3 cases per 100,000	508.2 cases per 100,000	518.9 cases per 100,000	398.3 cases per 100,000
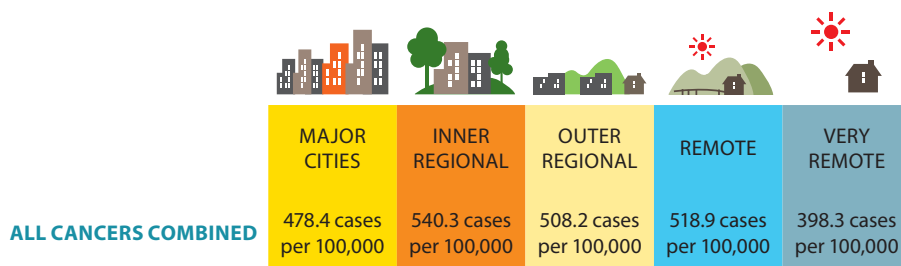
People living in *Inner Regional* areas had the highest age-standardised incidence rate for melanoma of the skin, prostate cancer, kidney cancer, breast cancer in females, colorectal cancer and, non-Hodgkin lymphoma, while people living in *Very Remote* areas had the lowest rate for the same cancers.

Compared to *Very remote* areas, people living in *Inner Regional* areas are:	MAJOR CITIES	INNER REGIONAL	OUTER REGIONAL	REMOTE	VERY REMOTE
MELANOMA OF SKIN 2.2 times more likely to be diagnosed with melanoma of the skin	45.2	61.8	54.3	49.2	28.6
PROSTATE CANCER 2.0 times more likely to be diagnosed with prostate cancer	177.7	206	186.6	175.0	104.0
KIDNEY CANCER 1.7 times more likely to be diagnosed with kidney cancer	11.4	12.5	11.9	11.7	7.2
BREAST CANCER (FEMALES) 1.6 times more likely to be diagnosed with breast cancer	113.5	119.6	108.0	105.1	76.7
COLORECTAL CANCER 1.6 times more likely to be diagnosed with colorectal cancer	59.6	70.2	67.0	68.1	43.6
NON-HODGKIN LYMPHOMA 1.4 times more likely to be diagnosed with non-Hodgkin lymphoma	18.7	19.4	17.0	17.6	14.2

Note: All rates are cases per 100,000.

Deaths

Between 2008 and 2012, the age-standardised mortality rate was highest in *Very Remote* and *Remote* areas and lowest in *Major Cities*.

	MAJOR CITIES	INNER REGIONAL	OUTER REGIONAL	REMOTE	VERY REMOTE
ALL CANCERS COMBINED	166.7 deaths per 100,000	185.4 deaths per 100,000	190.2 deaths per 100,000	191.8 deaths per 100,000	191.9 deaths per 100,000
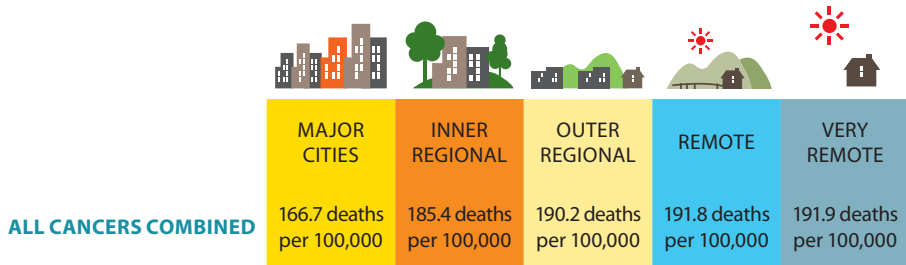
People living in *Very Remote* areas had the highest age-standardised mortality rate for cervical cancer, cancer of unknown primary site, lung cancer, bladder cancer and prostate cancer, while people living in *Major cities* had the lowest rate for the same cancers.

Compared to *Major cities* people living in *Very remote* areas are:	MAJOR CITIES	INNER REGIONAL	OUTER REGIONAL	REMOTE	VERY REMOTE
CERVICAL CANCER 2.6 times more likely to die from cervical cancer	1.8	1.9	2.3	2.6	4.6
CANCER OF UNKNOWN PRIMARY SITE 1.6 times more likely to die from cancer of unknown primary site	8.5	9.9	11.4	11.8	13.6
LUNG CANCER 1.4 times more likely to die from lung cancer	31.5	34.9	37.0	40.8	43.2
BLADDER CANCER 1.3 times more likely to die from bladder cancer	4.0	4.2	4.2	4.2	5.2
PROSTATE CANCER 1.3 times more likely to die from prostate cancer	28.0	34.1	35.0	32.0	35.0

Note: All rates are deaths per 100,000.

Find out more: Chapter 8 in *Cancer in Australia: an overview, 2014.*

Key groups: Socioeconomic disadvantage

New cancer cases

Between 2006 and 2009, the age-standardised incidence rate was higher in the more disadvantaged areas and lower in less disadvantaged areas.

	1 (MOST)	2	3	4	5 (LEAST)
ALL CANCERS COMBINED	498.4 cases per 100,000	504.6 cases per 100,000	495.2 cases per 100,000	489.9 cases per 100,000	486.3 cases per 100,000

People living in the most disadvantaged areas had the highest age-standardised incidence rate for lung cancer, cancer of unknown primary site, bladder cancer and cervical cancer, while people living in the least disadvantaged areas had the lowest rate for the same cancers.

People living in the least disadvantaged areas had the highest age-standardised incidence rate for breast cancer in females and prostate cancer, while people living in the most disadvantaged areas had the lowest rate for the same cancers.

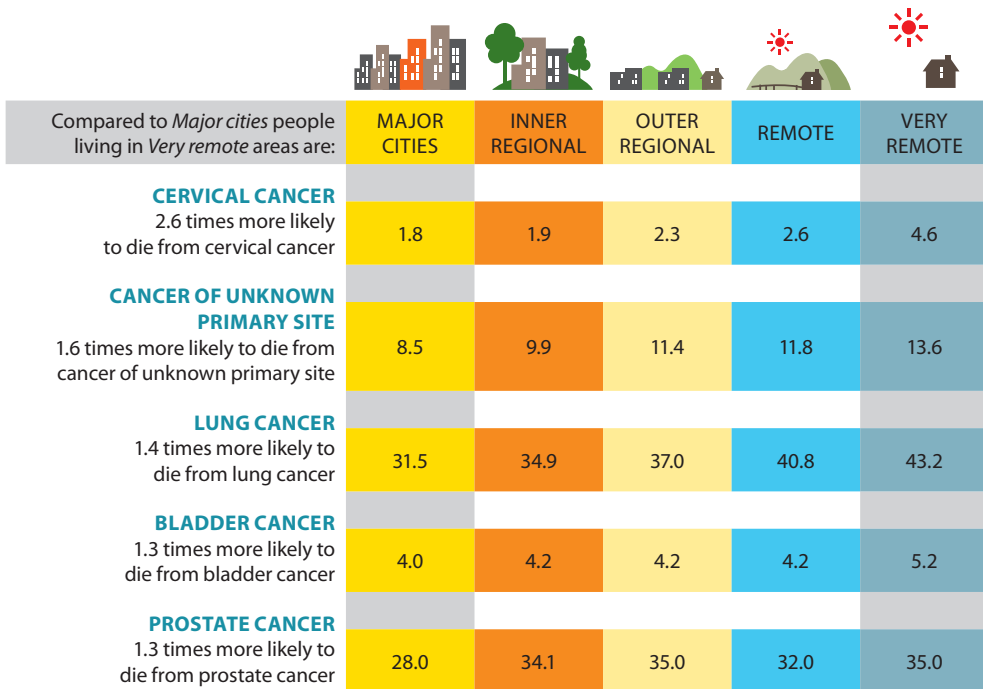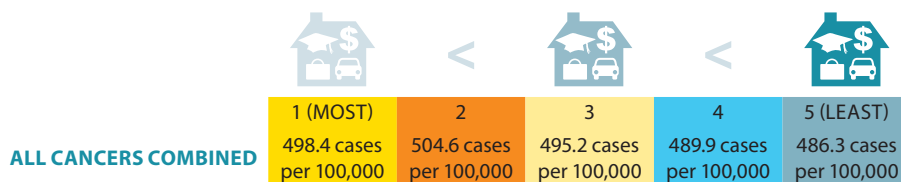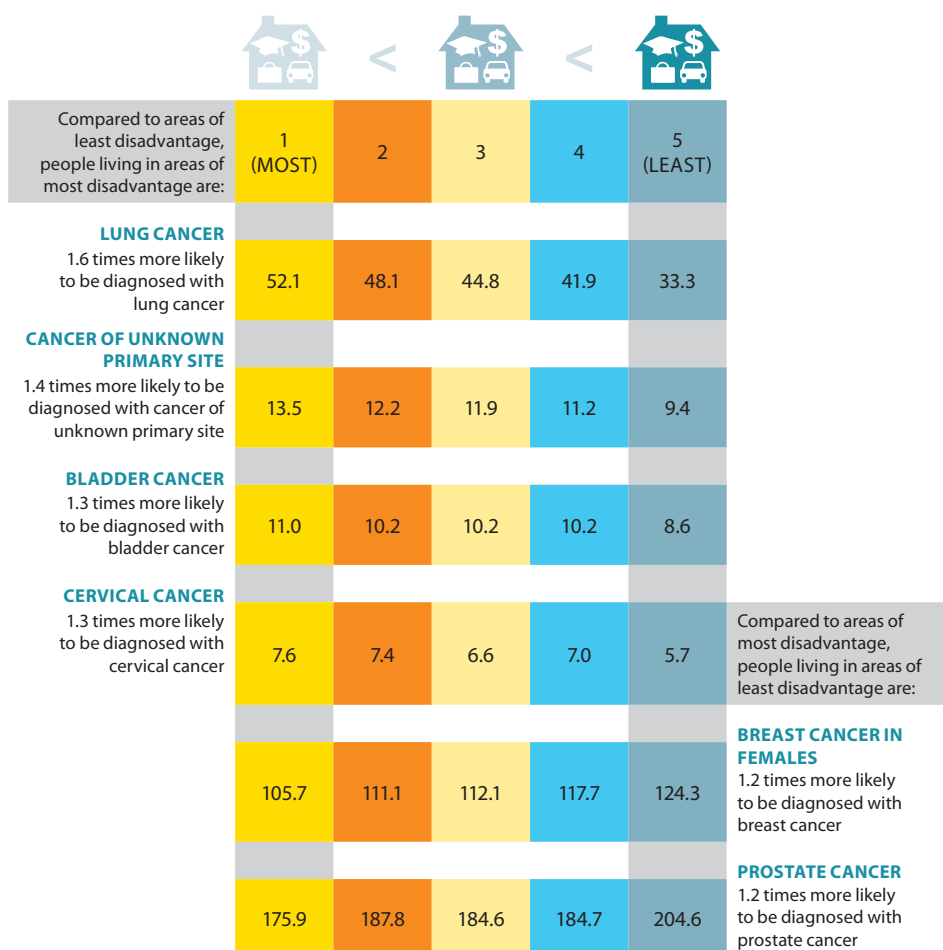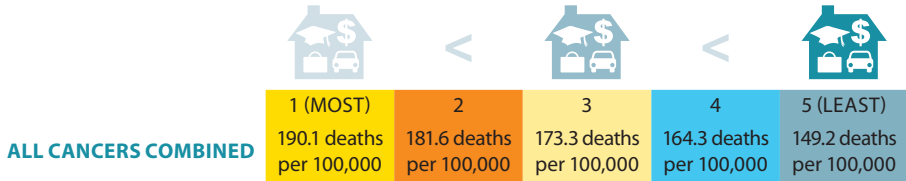| Compared to areas of least disadvantage, people living in areas of most disadvantage are:	1 (MOST)	2	3	4	5 (LEAST)	
LUNG CANCER 1.6 times more likely to be diagnosed with lung cancer	52.1	48.1	44.8	41.9	33.3	
CANCER OF UNKNOWN PRIMARY SITE 1.4 times more likely to be diagnosed with cancer of unknown primary site	13.5	12.2	11.9	11.2	9.4	
BLADDER CANCER 1.3 times more likely to be diagnosed with bladder cancer	11.0	10.2	10.2	10.2	8.6	
CERVICAL CANCER 1.3 times more likely to be diagnosed with cervical cancer	7.6	7.4	6.6	7.0	5.7	Compared to areas of most disadvantage, people living in areas of least disadvantage are:
	105.7	111.1	112.1	117.7	124.3	**BREAST CANCER IN FEMALES** 1.2 times more likely to be diagnosed with breast cancer
	175.9	187.8	184.6	184.7	204.6	**PROSTATE CANCER** 1.2 times more likely to be diagnosed with prostate cancer

Note: All rates are cases per 100,000.

Deaths

Between 2009 and 2012, the age-standardised mortality rate was highest in the most disadvantaged areas and lowest in the least disadvantaged areas.

	1 (MOST)	2	3	4	5 (LEAST)
ALL CANCERS COMBINED	190.1 deaths per 100,000	181.6 deaths per 100,000	173.3 deaths per 100,000	164.3 deaths per 100,000	149.2 deaths per 100,000

People living in the most disadvantaged areas had the highest age-standardised mortality rate for cervical cancer, lung cancer, cancer of unknown primary site, kidney cancer and colorectal cancer, while people living in the least disadvantaged areas had the lowest rate for the same cancers.
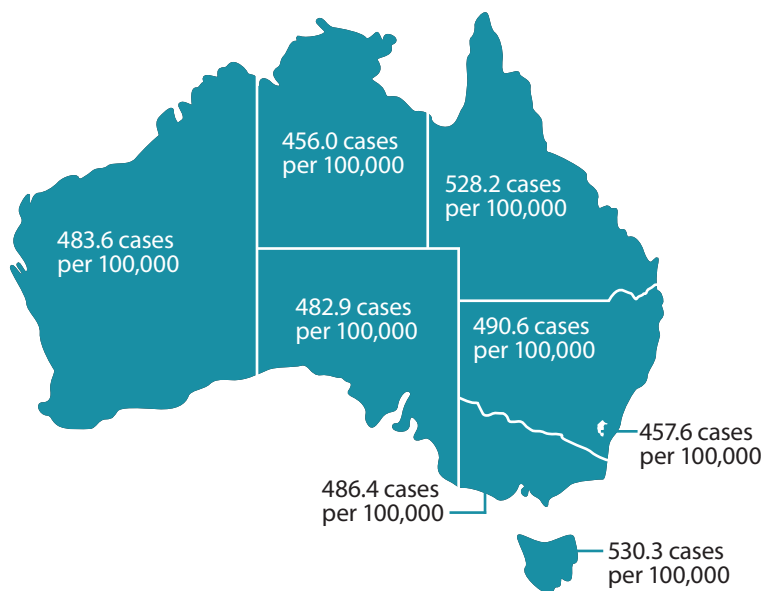
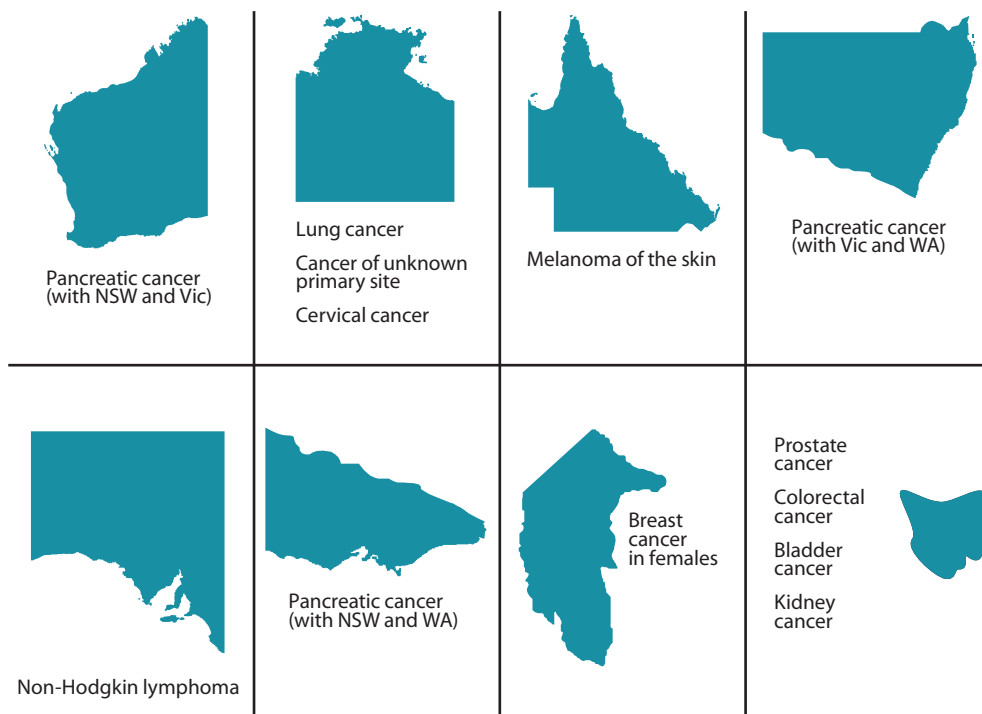| Compared to areas of least disadvantage, people living in areas of most disadvantage are:	1 (MOST)	2	3	4	5 (LEAST)
CERVICAL CANCER 1.9 times more likely to die from cervical cancer	2.5	2.4	1.6	1.5	1.3
LUNG CANCER 1.7 times more likely to die from lung cancer	39.8	36.0	33.1	29.3	24.0
CANCER OF UNKNOWN PRIMARY SITE 1.5 times more likely to die from cancer of unknown primary site	10.5	10.0	8.5	8.3	7.2
KIDNEY CANCER 1.3 times more likely to be die from kidney cancer	4.0	4.0	3.7	3.4	3.1
COLORECTAL CANCER 1.2 times more likely to die from colorectal cancer	17.4	16.3	16.2	15.9	14.5
PROSTATE CANCER 1.1 times more likely to die from prostate cancer	30.8	31.5	30.8	28.7	27.5
BREAST CANCER IN FEMALES As likely to die from breast cancer	21.9	21.5	21.6	21.1	21.5

Note: All rates are deaths per 100,000.

Find out more: Chapter 8 in *Cancer in Australia: an overview, 2014*.

Key groups: state and territory

Between 2005 and 2009, the highest incidence rates of all cancers combined were in Tasmania, followed by Queensland, New South Wales, Victoria, Western Australia, South Australia, the Australian Capital Territory and the Northern Territory.
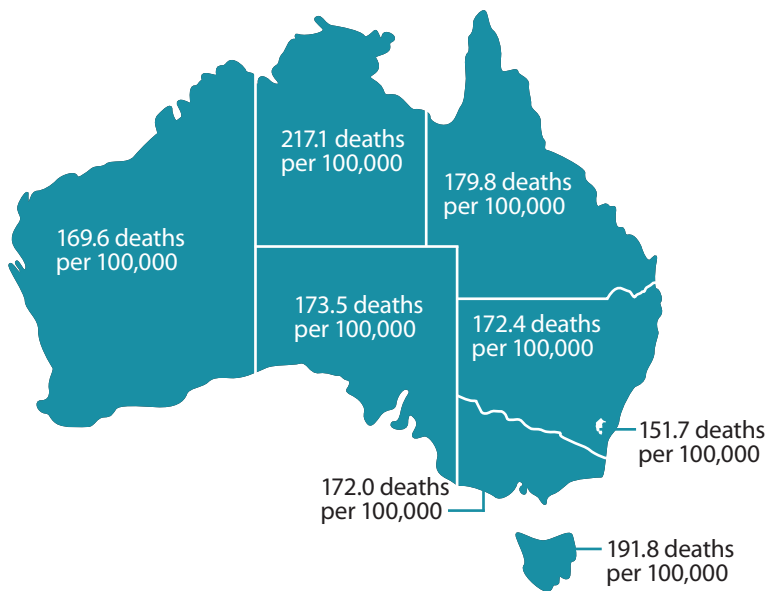
456.0 cases per 100,000

528.2 cases per 100,000

483.6 cases per 100,000

482.9 cases per 100,000

490.6 cases per 100,000

457.6 cases per 100,000

486.4 cases per 100,000

530.3 cases per 100,000

The age-standardised incidence rates for selected cancers were highest for:

Pancreatic cancer (with NSW and Vic)

Lung cancer

Cancer of unknown primary site

Cervical cancer

Melanoma of the skin

Pancreatic cancer (with Vic and WA)

Non-Hodgkin lymphoma

Pancreatic cancer (with NSW and WA)

Breast cancer in females

Prostate cancer

Colorectal cancer
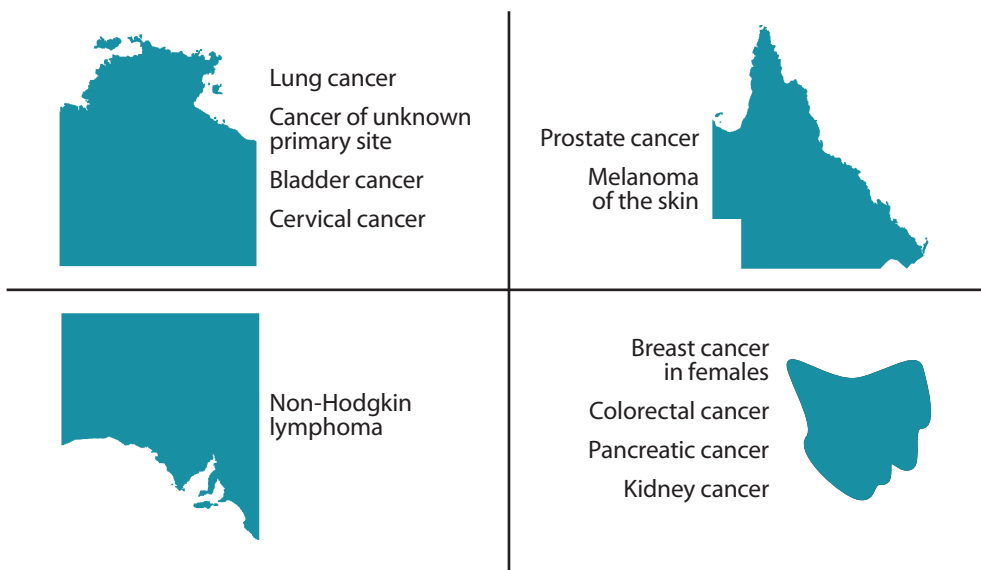
Bladder cancer

Kidney cancer

Between 2008 and 2012, the mortality rate for all cancers combined was highest in the Northern Territory, followed by Tasmania, Queensland, South Australia, New South Wales, Victoria, Western Australia and the Australian Capital Territory.

217.1 deaths per 100,000

179.8 deaths per 100,000

169.6 deaths per 100,000

173.5 deaths per 100,000

172.4 deaths per 100,000

151.7 deaths per 100,000

172.0 deaths per 100,000

191.8 deaths per 100,000

The age-standardised mortality rates for selected cancers were highest for:

Lung cancer
Cancer of unknown primary site
Bladder cancer
Cervical cancer

Prostate cancer
Melanoma of the skin

Non-Hodgkin lymphoma

Breast cancer in females
Colorectal cancer
Pancreatic cancer
Kidney cancer

Find out more: Chapter 8 in *Cancer in Australia: an overview, 2014.*

International comparisons

In 2012:

- there was an estimated 14.1 million cancers diagnosed and 8.2 million deaths from cancer worldwide

- Australia accounted for 0.9% of all cancers combined diagnosed and 0.5% of all cancer deaths

- Australia had a higher incidence rate for all cancers combined than other country groups, which could be partly attributable to national population screening programs in Australia

- Australia's mortality rate was lower than the average world rate

- Australia's incidence rate of melanoma of the skin was more than 11 times the average world rate and the mortality rate was more than 6 times the average world rate.

- The mortality-to-incidence ratio (MIR) for Australia was 0.3, suggesting that cancer survival was high in Australia.

International comparison of mortality-to-incidence ratios for all cancers combined, persons, 2012
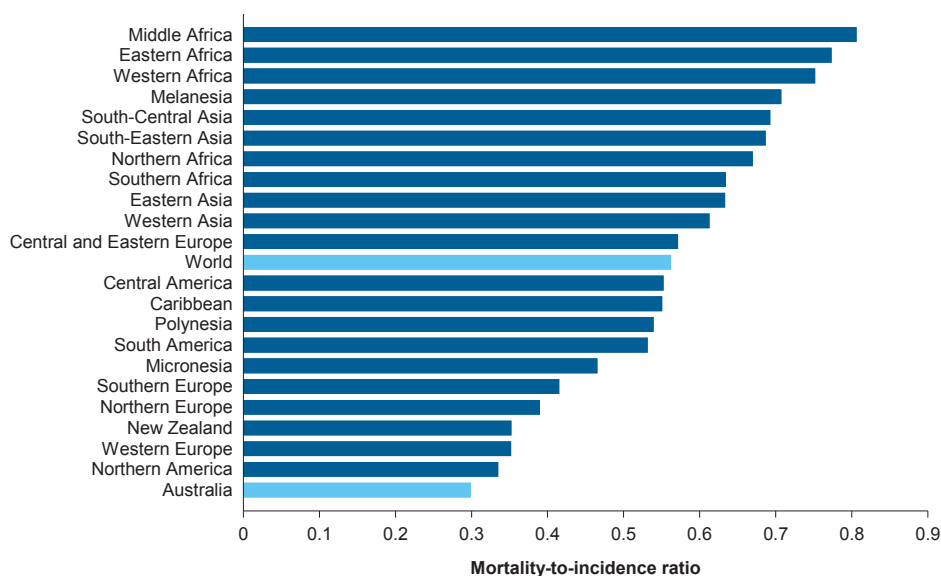
Notes

1. Cancer coded in ICD-10 as C00–C97, excluding C44 non-melanoma skin cancer.

2. The ratios are based on incidence and mortality data which were estimated for 2012 by the IARC.

3. The mortality-to-incidence ratio equals the age-standardised mortality rate divided by the age-standardised incidence rate. The age-standardised rates were standardised by the IARC using the Doll et al. (1966) World Standard Population. Countries or regions are ordered in descending order according to the mortality-to-incidence ratio.

Source: Ferlay et al. 2013.

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Cancer in Australia: in brief 2014 presents key points and trends from the Australian Institute of Health and Welfare's latest biennial report about cancer in Australia, *Cancer in Australia: an overview, 2014*.