Cancer in Tasmania

Incidence and Mortality 2020

Tasmanian Cancer Registry

UNIVERSITY of TASMANIA
MENZIES
Institute for Medical Research

Tasmanian Government

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Acknowledgement of country

In recognition of the deep history and culture of this island, we acknowledge and pay our respects to all Tasmanian Aboriginal people; the past and present custodians of the Land.

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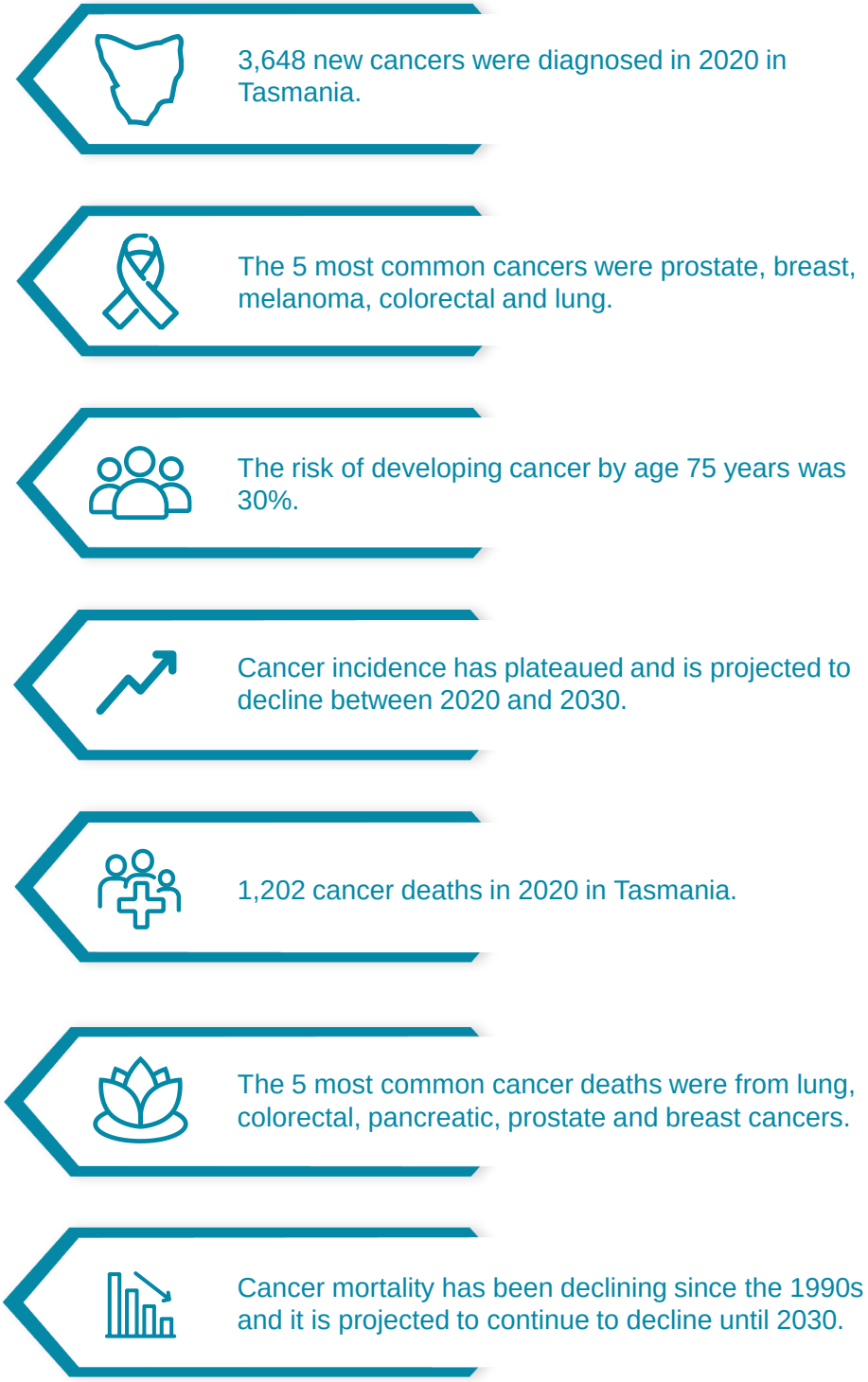


Cancer in Tasmania

This section provides a summary of cancer incidence and mortality among Tasmanian residents for all cancers combined and most common cancers (excluding keratinocyte cancers) in 2020.

Incidence for all cancers, 2020

There were 3,648 new cases of cancer diagnosed among Tasmanian residents in 2020. The overall age-standardised incidence rate was 473 per 100,000. The cumulative risk of developing cancer by ages 75 and 85 years were 30% in 45%, respectively. The number of new cases was higher for males than females (Table 1).

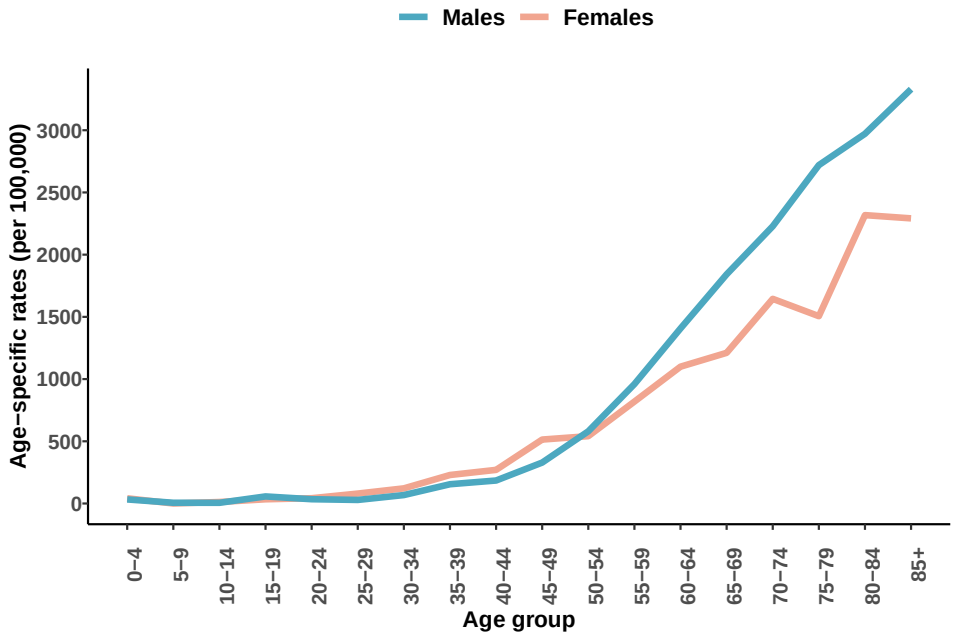
Table 1: Incidence for all cancers combined by sex, Tasmania, 2020

	Males	Females	Persons
Number of cases[1]	1,961	1,687	3,648
Age-standardised rate[2]	520.6	431.0	472.8
Cumulative risk to age 75	32.7	28.3	30.5
Cumulative risk to age 85	49.4	40.8	45.1

[1] Excludes keratinocyte cancers [2] Rate per 100,000 persons (2001 Australian Standard Population)

Cancer incidence rates generally increased with age. Male rates exceeded female rates for Tasmanians aged 55 years and over (Figure 1).

Figure 1: Age-specific incidence rates for all cancers combined (excluding keratinocyte cancers) by sex, Tasmania, 2020



Summary tables of incidence by cancer site and sex can be found in Appendix C.

Mortality for all cancers, 2020

There were 1,202 cancer deaths in Tasmania in 2020. The overall age-standardised mortality rate was 145 per 100,000. The cumulative risk of dying from cancer by ages 75 and 85 were 8% in 18%, respectively. The number of new deaths was higher for males than females (Table 2).

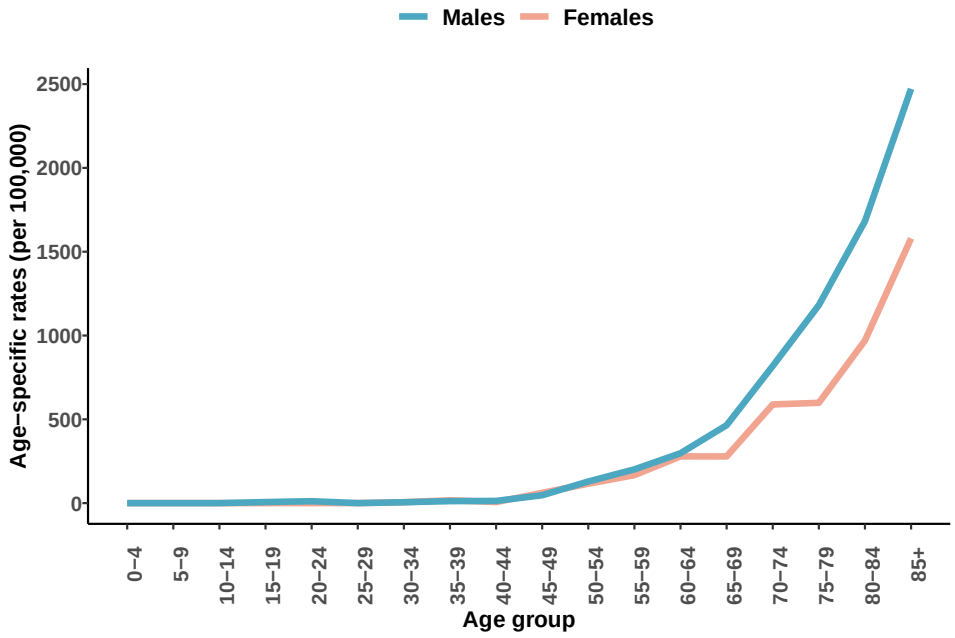
Table 2: Mortality for all cancers combined by sex, Tasmania, 2020

	Males	Females	Persons
Number of deaths[1]	679	523	1,202
Age-standardised rate[2]	175.7	118.0	144.6
Cumulative risk to age 75	9.5	7.3	8.4
Cumulative risk to age 85	21.6	14.3	17.9

[1] Excludes keratinocyte cancers [2] Rate per 100,000 persons (2001 Australian Standard Population)

Cancer mortality rates increased with age and were higher for males than females for those aged 60-64 years and over (Figure 2).

Figure 2: Age-specific mortality rates for all cancers combined (excluding keratinocyte cancers) by sex, Tasmania, 2020



Summary tables of mortality by cancer site and sex can be found in Appendix C.

Most common cancers

Incidence for most common cancers, 2020

The most common cancer diagnosed in males in 2020 was prostate cancer, followed by melanoma, colorectal cancer, lung cancer and all lymphomas. The most common cancer diagnosed in females in 2020 was breast cancer, followed by melanoma, colorectal cancer, lung cancer and all lymphomas (Table 3).

Table 3: Incidence for 10 most common cancers by sex, Tasmania, 2020

	Percent[1]	Cases[2]	ASR[3]
Males			
Prostate	28.4	519	126.9
Melanoma of skin	12.1	221	62.7
Colorectal	11.1	202	55.4
Lung	10.0	183	47.1
All lymphomas	5.1	93	26.8
Head and neck	4.3	79	21.2
Kidney	3.5	63	17.2
Pancreas	3.1	57	15.0
All leukaemia	3.1	56	16.9
Bladder	3.0	55	13.6
Females			
Breast	28.0	447	117.8
Melanoma of skin	12.8	205	57.8
Colorectal	12.6	201	50.4
Lung	9.5	152	34.5
All lymphomas	5.4	87	23.7
Uterus	4.9	78	19.8
Pancreas	3.9	63	14.4
All leukaemia	2.5	40	9.5
Head and neck	1.9	31	8.5
Ovary	1.8	29	8.4

[1] Percentage of total of cases for each sex respectively [2] Number of cases excludes keratinocyte cancers [3] Age-standardised incidence rates per 100,000 persons (2001 Australian Standard Population)

The most common cancers among young people aged 0-24 were leukaemia for males and colorectal cancer for females. Among all other age groups, the most common cancers were prostate cancer for males and breast cancer for females (Table 4).

Table 4: Incidence for 5 most common cancers by sex and age, Tasmania, 2020

Males	Percent[1]	Cases[2]	IR[3]	Females	Percent[1]	Cases[2]	IR[3]
0-24 years							
All leukaemia	27.3	6	7.3	Colorectal	20.0	4	5.2
Brain	18.2	4	4.8	All lymphomas	20.0	4	5.2
Testis	13.6	3	3.6	Melanoma of skin	15.0	3	3.9
Melanoma of skin	9.1	2	2.4	Eye	10.0	2	2.6
Thyroid	9.1	2	2.4	Connective tissue	5.0	1	1.3
25-59 years							
Prostate	18.6	73	58.4	Breast	34.9	162	126.5
Melanoma of skin	16.3	64	51.2	Melanoma of skin	17.7	82	64.0
Colorectal	13.2	52	41.6	Colorectal	10.8	50	39.0
All lymphomas	8.1	32	25.6	Uterus	5.6	26	20.3
Lung	7.1	28	22.4	All lymphomas	5.4	25	19.5
60-74 years							
Prostate	36.0	305	606.5	Breast	30.0	196	372.7
Melanoma of skin	11.6	98	194.9	Lung	11.9	78	148.3
Lung	10.4	88	175.0	Melanoma of skin	11.9	78	148.3
Colorectal	8.9	75	149.1	Colorectal	11.2	73	138.8
Head and neck	4.6	39	77.5	Uterus	5.7	37	70.4
75+ years							
Prostate	24.8	140	656.3	Breast	19.3	89	344.5
Colorectal	13.3	75	351.6	Colorectal	16.1	74	286.4
Lung	11.9	67	314.1	Lung	12.6	58	224.5
Melanoma of skin	10.1	57	267.2	Melanoma of skin	9.1	42	162.6
All lymphomas	4.8	27	126.6	Pancreas	5.4	25	96.8

[1] Percentage of total of cases for each age and sex grouping respectively [2] Number of cases excludes keratinocyte cancers [3] Incidence rates per 100,000 persons

Mortality for most common cancers, 2020

The most common cancer deaths for males in 2020 were from lung cancer, followed by prostate, colorectal and pancreatic cancers. The most common cancers deaths in females in 2020 were from lung cancer, followed by breast, colorectal and pancreatic cancers (Table 5).

Table 5: Mortality for 10 most common cancers by sex, Tasmania, 2020

	Percent[1]	Deaths[2]	ASR[3]
Males			
Lung	22.0	131	33.6
Prostate	14.8	88	22.2
Colorectal	11.1	66	17.8
Pancreas	9.2	55	14.2
All leukaemia	4.9	29	7.7
Melanoma of skin	4.5	27	7.4
Brain	4.2	25	6.4
Head and neck	3.9	23	6.0
Mesothelioma	3.5	21	5.3
Bladder	3.5	21	5.2
Females			
Lung	19.5	89	20.6
Breast	17.1	78	17.7
Colorectal	13.6	62	14.1
Pancreas	9.6	44	9.6
Ovary	4.2	19	4.1
All lymphomas	3.1	14	2.9
Gallbladder	2.8	13	2.6
Bladder	2.8	13	2.6
Brain	2.8	13	3.6
Liver	2.6	12	3.1

[1] Percentage of total of deaths for each sex respectively [2] Number of deaths excludes keratinocyte cancers [3] Age-standardised mortality rates per 100,000 persons (2001 Australian Standard Population)

The most common cancer deaths among people aged 0-59 years were from lung cancer for males and breast cancer for females. Among all other age groups, the most common cancer deaths were from lung cancer for both males and females (Table 6).

Table 6: Mortality for 5 most common cancers by sex and age, Tasmania, 2020

Males	Percent[1]	Deaths[2]	MR[3]	Females	Percent[1]	Deaths[2]	MR[3]
0-59 years							
Lung	26.2	17	8.2	Breast	19.4	13	6.3
Colorectal	16.9	11	5.3	Lung	17.9	12	5.8
Pancreas	9.2	6	2.9	Colorectal	16.4	11	5.3
Melanoma of skin	9.2	6	2.9	Cervix	10.4	7	3.4
Brain	7.7	5	2.4	Liver	7.5	5	2.4
60-74 years							
Lung	25.2	56	111.3	Lung	23.9	43	81.8
Prostate	14.9	33	65.6	Breast	19.4	35	66.6
Pancreas	9.0	20	39.8	Colorectal	15.0	27	51.3
Colorectal	7.2	16	31.8	Pancreas	12.8	23	43.7
Brain	5.9	13	25.8	Ovary	6.1	11	20.9
75+ years							
Lung	18.8	58	271.9	Lung	16.2	34	131.6
Prostate	17.9	55	257.8	Breast	14.3	30	116.1
Colorectal	12.7	39	182.8	Colorectal	11.4	24	92.9
Pancreas	9.4	29	136.0	Pancreas	9.0	19	73.5
All leukaemia	6.2	19	89.1	Gallbladder	5.7	12	46.4

[1] Percentage of total of deaths for each age and sex grouping respectively [2] Number of deaths excludes keratinocyte cancers [3] Mortality rates per 100,000 persons

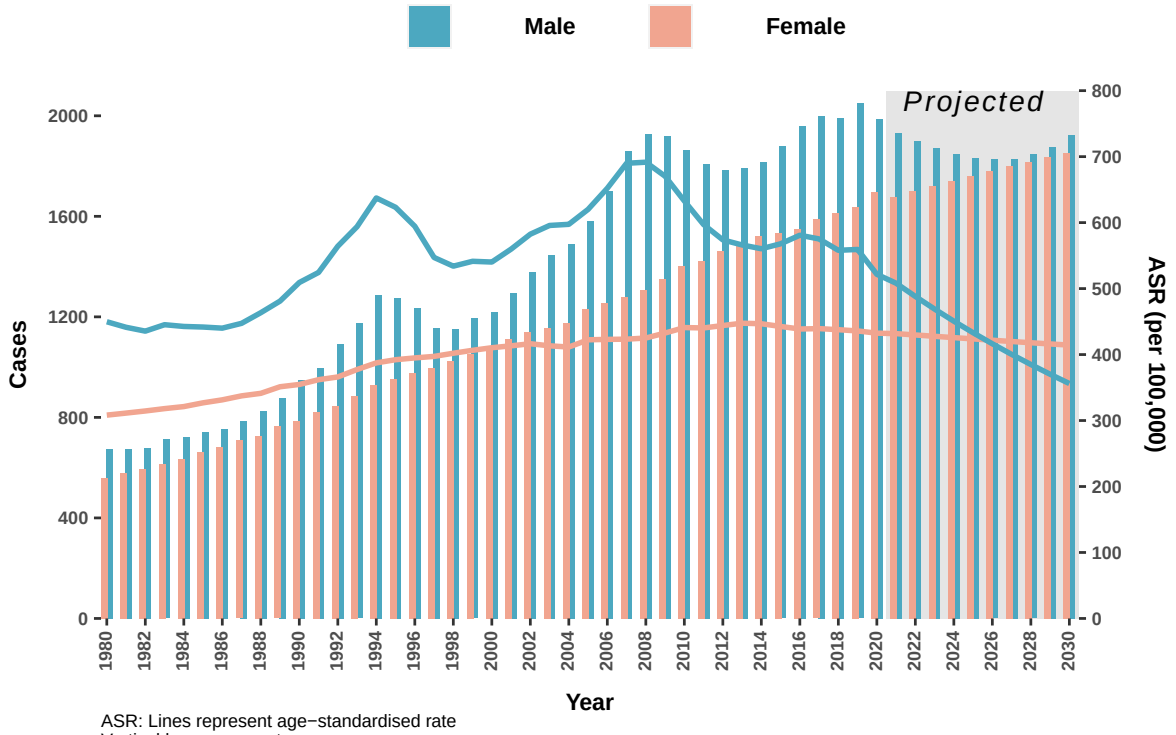
Temporal trends

Trends in incidence, 1980-2030

In 2020 there was a slight decrease in the age-standardised incidence rates for males and females compared with 2019 (Figure 3). For males, rates increased from the early 1990s until the late 2000s. Since then, rates have been declining and this trend is projected to continue. For females, rates increased slightly between the 1990s and the mid-2010s. They have since plateaued and declined slightly, a trend that is projected to continue.

The number of cancer cases has been increasing steadily since the 1990s (Figure 3). For females, numbers are projected to continue to increase. For males, numbers are projected to decline in the early 2020s then increase slightly towards 2030.

Figure 3: Trends in actual (1980-2020) and projected (2021-2030) incidence for all cancers combined (excluding keratinocyte cancers) by sex, Tasmania, 1980-2030



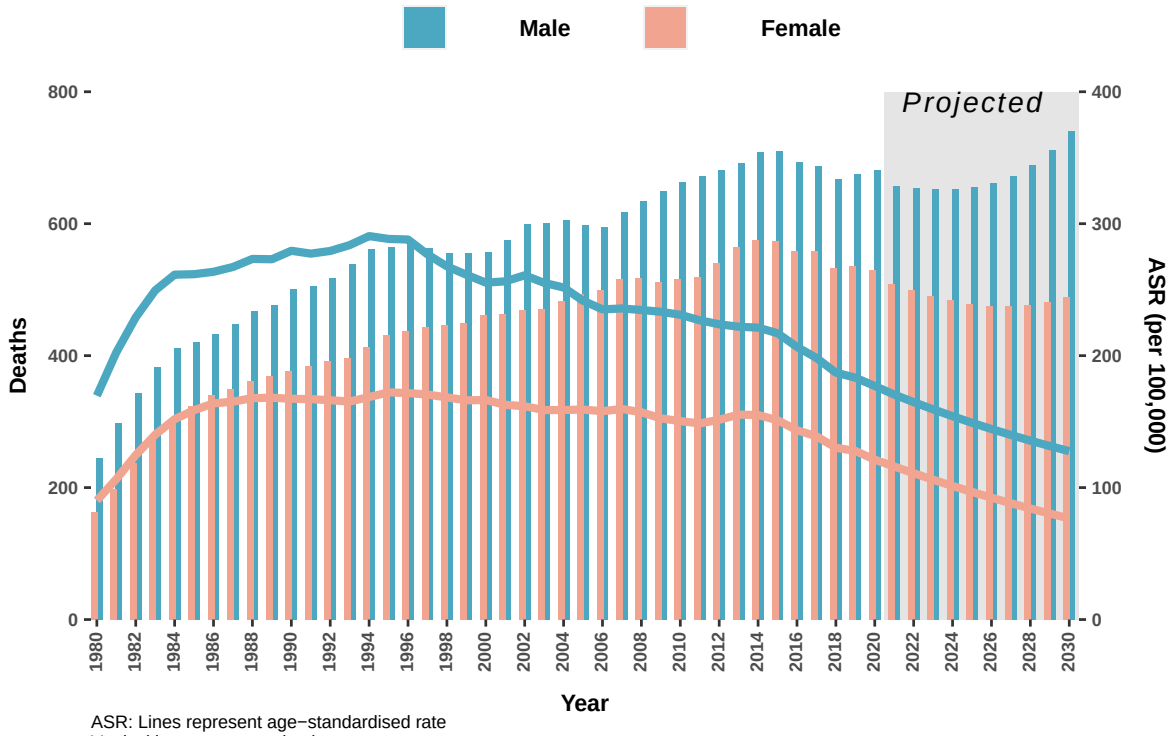
ASR: Lines represent age−standardised rate
Vertical bars represent cases

Trends in mortality, 1980-2030

Age-standardised mortality rates have been declining since the mid-1990s for both males and females (Figure 4). This trend is projected to continue from 2021 onwards.

The number of deaths from cancer has increased steadily until the mid-2010s for both males and females (Figure 4). Since then, it has declined slightly and plateaued, and for males it is projected to slightly increase again in the late 2020s.

Figure 4: Trends in actual (1980-2020) and projected (2021-2030) mortality for all cancers combined (excluding keratinocyte cancers) by sex, Tasmania, 1980-2030

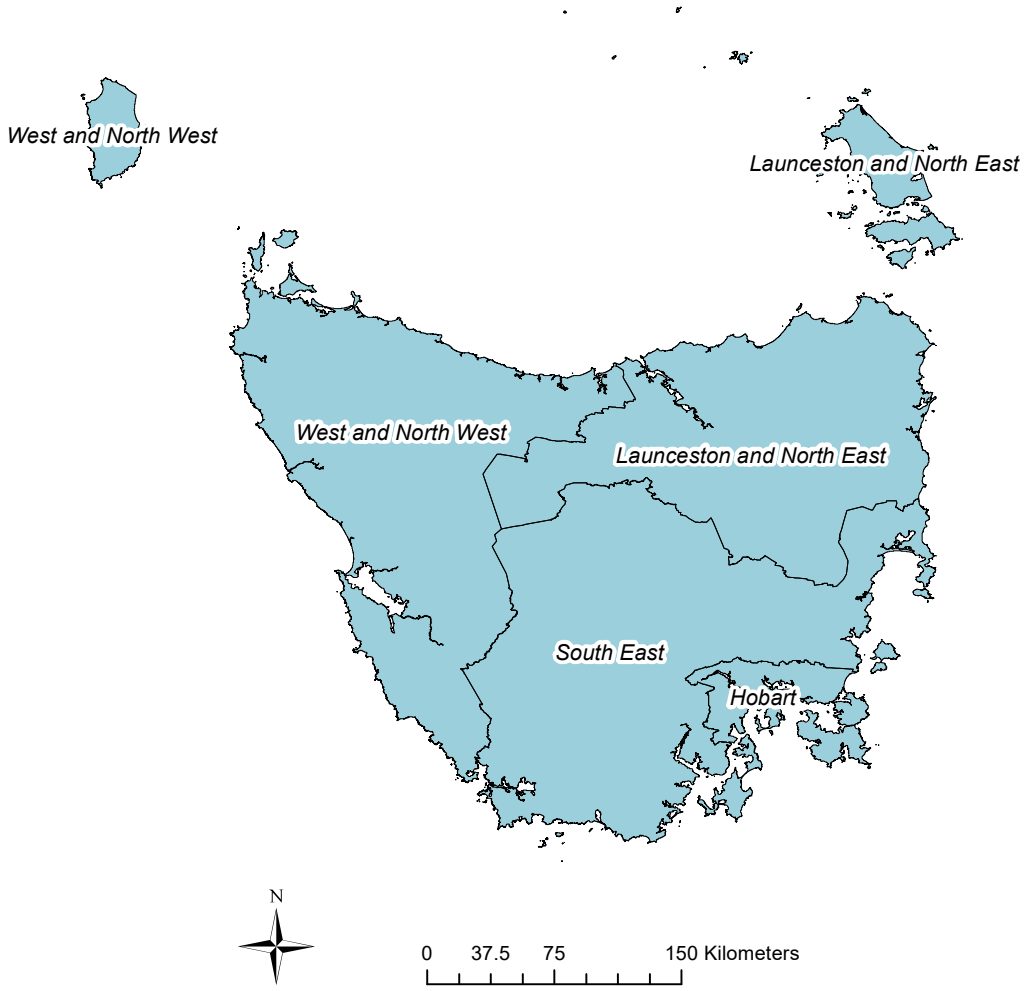


ASR: Lines represent age−standardised rate
Vertical bars represent deaths

Geographical distribution of cancer

Tasmania has four Statistical Areas Level 4 (SA4), according to the Australian Statistical Geographic Standard. These are Hobart, Launceston and North East, West and North West, and South East.

In 2020, the population of Tasmania was estimated at 557,578 persons.[1] Most of the population resided in Hobart (44%), followed by Launceston and North East (27%), West and North West (21%), and South East (7%).



Regional variation in incidence, 2016-2020

The regional distribution of cancer is shown as the number and percentage of cases and the standardised incidence ratio (SIR) by SA4 for 2016-2020 combined, based on residential address at the time of diagnosis (Table 7).

The SIR is an estimate of the number of cancer cases in each SA4 compared with what would be expected based on the average number of cases for the entire Tasmanian population after adjusting for differences in the age structure across areas. An SIR value of 100 indicates that the number of cases in an area is the same as the Tasmanian population, values above 100 indicate more cases than expected, while values below 100 indicate fewer cases than expected.

Area-level incidence rates for males and females did not differ from the Tasmanian average (Table 7).

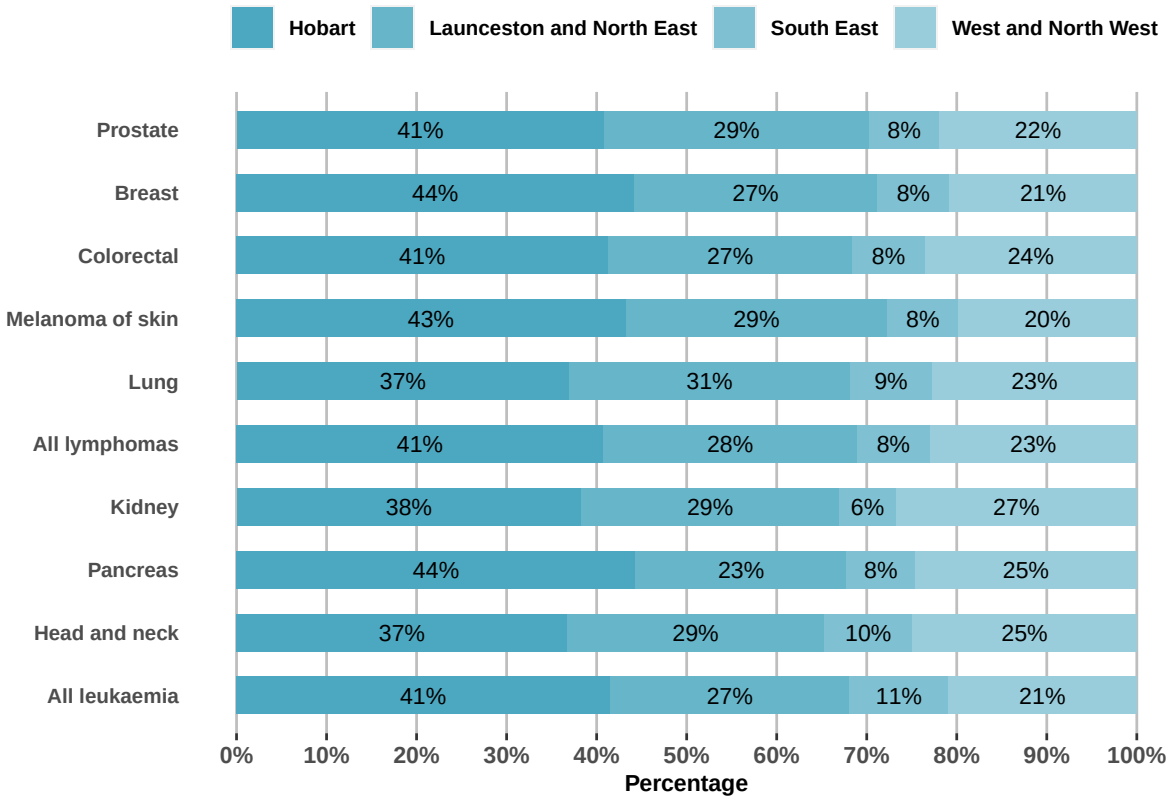
Table 7: Incidence for all cancers combined by Statistical Area Level 4 and sex, Tasmania, 2016-2020

SA4 Area	Percent[1]	Cases[2]	SIR (99% CI)[3]
Males			
Hobart	39.6	3,944	99 (95, 103)
Launceston and North East	28.6	2,849	101 (96, 106)
South East	8.9	886	97 (88, 105)
West and North West	23.0	2,290	101 (96, 107)
Females			
Hobart	42.3	3,392	101 (96, 105)
Launceston and North East	27.8	2,232	99 (94, 104)
South East	7.6	612	101 (90, 111)
West and North West	22.3	1,789	100 (94, 106)

[1] Percentage of total cases for each sex by SA4 statistical areas [2] Number of cases excludes keratinocyte cancers [3] Standardised incidence ratio expressed as a percentage (99% confidence interval)

There were small differences in the distribution of the 10 most common cancers by SA4 in Tasmania (Figure 5).

Figure 5: Incidence for most common cancers by Statistical Area Level 4, Tasmania, 2016-2020



Incidence by area-level socioeconomic status, 2016-2020

Standardised incidence ratios were calculated over quintiles of the Index of Relative Socio-economic Disadvantage (IRSD) for all cancers combined between 2016-2020. SIRs showed a increasing trend with increasing disadvantage (Table 8).

Table 8: Incidence for all cancers combined by area-level socioeconomic status and sex, Tasmania, 2016-2020

IRSD[1]	Percent[2]	Cases[3]	SIR (99% CI)[4]
Males			
Q1: Most disadvantaged	18.8	1,866	103 (97, 109)
Q2	21.0	2,080	106 (100, 112)
Q3	20.7	2,050	101 (95, 106)
Q4	20.4	2,021	96 (90, 101)
Q5: Least disadvantaged	19.2	1,910	95 (90, 101)
Females			
Q1: Most disadvantaged	20.1	1,604	109 (102, 116)
Q2	21.6	1,728	111 (104, 118)
Q3	18.9	1,509	94 (87, 100)
Q4	20.2	1,618	96 (89, 102)
Q5: Least disadvantaged	19.2	1,537	93 (87, 99)

[1] Quintiles of the Index of Relative Socio-economic Disadvantage [2] Percentage of total of cases by quntile of IRSD [3] Number of cases excludes keratinocyte cancers [4] Standardised incidence ratio expressed as a percentage (99% confidence interval)

Incidence by Remoteness Areas, 2016-2020

The Remoteness Structure divides Tasmania into categories of remoteness according to their relative geographic access to services. Standardised incidence ratios for all cancers combined did not vary by Remoteness Areas (Table 9).

Table 9: Incidence for all cancers combined by remoteness areas and sex, Tasmania, 2016-2020

Remoteness Areas	Percent[1]	Cases[2]	SIR (99% CI)[3]
Males			
Inner Regional	62.4	6,225	99 (96, 103)
Outer Regional/Remote	37.6	3,744	101 (97, 105)
Females			
Inner Regional	66.8	5,357	101 (97, 105)
Outer Regional/Remote	33.2	2,668	98 (93, 103)

[1] Percentage of total of cases by remoteness [2] Number of cases excludes keratinocyte cancers [3] Standardised incidence ratio expressed as a percentage (99% confidence interval)

Appendices

Appendix A: The Tasmanian Cancer Registry
Appendix B: Methods
Appendix C: Incidence and mortality summary tables

Appendix A

The Tasmanian Cancer Registry

Introduction

The Tasmanian Cancer Registry (TCR) was established in 1977 as a population-based registry covering the whole of Tasmania. The TCR provides the State Government with accurate cancer incidence and mortality statistics and monitors cancer trends. In July 1988 the operation of the TCR was moved from the Department of Health to the Menzies Institute for Medical Research. Cancer was declared a notifiable disease in December 1992 and cancer registration has since had a legislative basis.

TCR staff include a Director, a Manager, Clinical Coders and a Database Administrator. It also counts on the support and assistance of a Biostatistician and an Advisory Committee. The TCR is a full member of the Australasian Association of Cancer Registries (AACR) and the International Association of Cancer Registries.

Sources of data

All pathology laboratories in the State provide the TCR with electronic copies of histopathological and cytology reports of cancer and cell marker reports. Private and public hospitals notify diagnoses of cancer to the TCR upon discharge of patients by periodically providing a computerised listing of cancer cases. Death notifications for persons whose death occurs in Tasmanian are reviewed for mention of cancer as a cause of death. Interstate registries supply data to the TCR on Tasmanian residents who seek diagnosis and/or treatment interstate.

Data collection

The large majority of notifications provided to the TCR are via HL7 electronic messages. Any paper reports are scanned and archived. Data for cancers diagnosed between 1 January 2020 and 31 December 2020 were registered on an MS SQL (with MS ACCESS front-end) database developed in–house for the TCR. This database was developed to enable the registration of cancers using codes from the International Classification of Diseases for Oncology, Third Edition (ICD-O3)[2]; the electronic transfer and processing of cancer incidence and death notifications; the collection of the minimum dataset defined by the AACR's members; and improved access and manipulation of TCR data for data requests and reporting.

Information collected by the TCR includes demographic and clinical data for the patient with cancer according to a minimum dataset. Additional tumour data are collected selected sites and can be made available upon request.

The TCR collects keratinocyte cancers (i.e., basal cell carcinoma and cutaneous squamous cell carcinoma). Currently, lesion-based registrations are complete for the period 1978-2005 and person-based registrations are complete for the period 1978 to 2018.

Coding and reporting

This report presents data for invasive cancers only (behaviour = 3). In situ cancers and second primary cancers with the same three-digit topography code and related morphologies are excluded.

In this report, incidence refers to the number of new primary tumours that are diagnosed in the Tasmanian population in a year, rather than the number of people with cancer. While the TCR registers multiple primary cancers diagnosed in a person, not all primary tumours are reported in incidence rates according to the rules of the International Agency for Research on Cancer, the International Association of Cancer Registries and the AACR. Applying these rules to incidence reporting improves the comparability of Tasmanian cancer data with national and international cancer data.

The primary site and morphology were coded using the ICD-O3[2], but tabulated according to the International Classification of Diseases, 10th revision, Australian Modification (ICD-10)[3] codes. This allows comparisons to be made with national cancer incidence and mortality.

Coding classifications have changed since the establishment of the TCR. The Cancer in Tasmania 2001 was the first report to be tabulated using ICD-10; previous reports were tabulated using the International Classification of Diseases for Oncology, Ninth Edition (ICD-9), the earlier version of the classification. The Cancer in Tasmania 2003 report was the first to code the primary site and morphology using ICD-O3. In prior reports, the primary sites were coded using the ICD-9 and the morphologies were coded using the Systematized Nomenclature of Medicine and Modifications (SNOMED) and the International Classification of Diseases for Oncology, Second Edition (ICD-O2). An explanation of these changes can be found below under the subheading Differences in reporting due to coding changes.

In line with all other Australian state and territory cancer registries, the TCR routinely codes all melanomas of unknown site to ICD-03 C44 (skin), and these are reported as ICD-10 C43 'Melanoma of Skin.' This is consistent with reporting practices from the 2003 reports onwards. Melanoma morphology codes occurring at other sites are coded to the site in which they occurred. Cancers reported as C44 skin cancer include all malignant cancers of the skin, but exclude basal cell carcinomas, cutaneous squamous cell carcinomas, melanomas (reported as ICD-10 C43), some Kaposi sarcomas (reported as ICD-10 C46), and some types of lymphomas (ICD-10 C81-C85).

A feature first introduced in the 2006 report showed rates for the most common cancers by Local Government Areas of residence. From the 2017 report, these rates are now published at the Statistical Area 4 level, in accordance with the current Australian Bureau of Statistics' Australian Statistical Geographic Standard.[1]

The 2020 report is the first to introduce cancer projections and describe incidence rates for the most common cancers by age group, area-level socioeconomic status and Remoteness Areas, in accordance with the Australian Bureau of Statistics' Socio-Economic Indexes for Areas and Remoteness Structure.[4,5]

The incidence and mortality tables for the 2020 report describe age-standardised rates using the 2001 Australian Standard Population, which is consistent with national data published by the Australian Institute of Health and Welfare. Previous reports have also included rates standardised to the 1960 and 2000 World Standard Populations.

Cancer sites and groups

Table 10 includes a description of the ICD-10 cancer sites and groups used in this report.

Table 10: Cancer sites and groups used in this report according to the International Statistical Classification of Diseases and Related Health Problems, 10th revision, Australian Modification (ICD-10)

ICD-10 description	ICD-10
Lip, oral cavity and pharynx (C00 - C14)	
Lip	C00
Tongue	C01, C02
Gum	C03
Floor of mouth	C04
Other mouth	C05, C06
Oral Cavity	C01-C06
Salivary glands	C07, C08
Oropharynx	C09, C10
Nasopharynx	C11
Hypopharynx (including pyriform sinus)	C12, C13
Pharynx	C09-C13
Other oral (includes other & unspecified sites of lip, oral cavity & pharynx)	C14
Head and neck	C01-C14, C30-C32
Digestive organs (C15 - C26)	
Oesophagus	C15
Stomach	C16
Small intestine (including duodenum)	C17
Colon	C18
Rectum (including rectosigmoid, anal canal & anus)	C19-C21
Colorectal	C18-C21
Liver (and intrahepatic bile ducts)	C22
Gallbladder (and other biliary tract)	C23, C24
Pancreas	C25
Respiratory system and intrathoracic organs (C30 - C39)	
Nasal cavities	C30, C31
Larynx	C32
Lung (includes trachea, bronchus & lung)	C33, C34
Thymus etc	C37, C38
Bones, joints and articular cartilage (C40 - C41)	
Bone (includes articular cartilage)	C40, C41
Skin (C43, C44)	
Melanoma of skin	C43
Skin (excludes melanoma)	C44
Mesothelioma and connective tissue (C45 - C49)	
Mesothelioma	C45
Kaposi sarcoma	C46
Connective tissue (includes peripheral nerves etc.)	C47, C49
Peritoneum & retroperitoneum	C48

ICD-10 description	ICD-10
Breast (C50) and female reproductive organs (C51 - C58)	
Breast	C50
Cervix	C53
Uterus	C54, C55
Vulva and other/unspecified female genital organs	C51, C52, C57
Ovary	C56
Placenta	C58
Male reproductive organs (C60 - C63)	
Prostate	C61
Testis	C62
Penis (and other male genital organs)	C60, C63
Urinary tract (C64 - C68)	
Kidney (except renal pelvis)	C64
Bladder	C67
Renal pelvis etc	C65, C66, C68
Eye, brain and other parts of the central nervous system (C69 - C72)	
Eye	C69
Brain	C71
Central nervous system (includes meninges)	C70, C72
Thyroid and other endocrine glands (C73 - C75)	
Thyroid	C73
Other endocrine (glands and related structures)	C74, C75
Malignant neoplasms of lymphoid, haematopoietic and related tissue (C81 - C96, D45-D47)	
Hodgkin disease	C81
Nodular NHL	C82
Diffuse NHL	C83
T-cell lymphoma	C84
Other NHL	C85
Non-Hodgkin's lymphoma	C82-C85
Other specified types of T/NK-cell lymphoma	C86
All lymphomas	C81-C86
Immunoproliferative diseases	C88
Multiple myeloma (and malignant plasma cell neoplasms)	C90
Lymphoid leukaemia	C91
Acute lymphoid leukaemia	C91.0
Chronic lymphoid leukaemia	C91.1
Myeloid Leukaemia	C92
Acute myeloid leukaemia	C92.0
Chronic myeloid leukaemia	C92.1
Other and unspecified leukaemia	C93-C95
All leukaemia	C91-C95
Other haematopoietic	C96
Myeloproliferative & myelodysplastic syndromes	D45-D47
Unknown primary site (C26, C39, C76, C80)	
Other & ill-defined sites	C26, C39, C76
Unspecified site	C80
All cancers combined (C00-C96, D45-D47)	
All cancers (excluding KCs)	C00-C96, D45-D47

Differences in reporting due to coding changes

While cancer types and groups are mostly comparable between reports, some coding and reporting changes have had an effect on incidence and mortality counts and rates. These changes have been made to improve the comparability of Tasmanian cancer data with other Australian state and territory cancer registries.

Non-Hodgkin's Lymphoma (ICD-10 C82-C85)

Lymphoid granulomatosis, which was previously considered of uncertain behaviour (morphology code 9766/1) is now deemed to be invasive (9766/3) and is reported in the table C85 'Other and unspecified types of NHL.' This change in reporting was made in response to a decision by the AACR coding and reporting committee in April 2006, and was first introduced in the 2004 report. A further change from ICD-O3.1 to ICD-O3.2 effective from the 2018 coding year introduced grades for lymphoid granulomatosis. Grades 1 and 2 are considered of uncertain behaviour (morphology code 9766/1) and grade 3 is considered malignant (morphology code 9766/3).

Leukaemia (ICD-10 C91-C95)

When the change from ICD-O2 to ICD-O3 occurred mid-way through 2003, some leukaemias started being coded as chronic myeloproliferative and myelodysplastic syndromes. This might have resulted in a decrease in reported leukaemia rates, however this has not been seen since the coding change occurred.

Kidney Cancer (ICD-10 C64)

Transitional cell carcinomas of the kidney (C649) are now coded to renal pelvis (C659). This change in reporting was made in response to a decision by the AACR coding and reporting committee in August 2006, and was first introduced in the 2004 report.

Bladder Cancer (ICD-10 C67)

Non-invasive papillary transitional cell carcinomas of the bladder were reported as invasive from 1995-2003, in response to pathologists' advice. In ICD-03 this cancer is again regarded as an in situ cancer and is now coded as 81302-papillary transitional cell carcinoma, non-invasive & papillary urothelial carcinoma. Therefore, in the 2001 and 2002 TCR annual reports this tumour type was counted as invasive bladder cancer, but from 2003 onwards it was excluded from bladder cancer reporting. This may be reflected in a drop in bladder cancer incidence and mortality rates from 2003 onwards.

Brain Cancer (ICD-10 C71)

In SNOMED coding (used by the TCR until 1 May 2003) pilocytic astrocytoma was coded as 94213, an invasive brain cancer. In ICD-O3 it is now coded as 94211, meaning uncertain behaviour. Therefore, TCR annual reports prior to 2003 will include these cases as invasive brain cancer, but they are excluded from reporting from 2003 onwards, which may be reflected in a drop in incidence and mortality rates.

Changes to ICD-03 codes

During 2019 the AACR agreed to changes from ICD-O3.1 to ICD-O3.2 to come into effect from the 2018 coding year. These changes are reflected in this report. A list of code changes are available here: Code changes.

Data control and quality assurance

The quality of information provided by the TCR depends on the quality of data received. To help achieve high data quality and case ascertainment, data are obtained from multiple sources such as pathology and radiology laboratories, hospitals and the Registry of Births, Deaths and Marriages. Most registered cases include data from both a pathology laboratory and a hospital service (inpatient or radiation oncology clinic). Where insufficient information is received to enable complete registration, active follow-up is undertaken by contacting treating doctors, pathology and radiology laboratories and hospital medical record departments.

The quality also depends on the accuracy of data processing by the TCR. The TCR's information system is able to detect a number of errors when data entry is performed. Data matching programs enable the identification and amendment of duplicate entries by identifying incorrect spellings, name changes and date of birth inconsistencies. In addition, the Cancer Data and Monitoring Unit of the AIHW collates all state and territory data and checks for duplicate registrations across two or more states.

The TCR receives electronic cancer notifications at least weekly from pathology laboratories, 6-monthly from hospitals, and monthly from the Registry of Births, Deaths and Marriages. The cases are usually registered within twelve months of notification and resolution of incomplete information can take up to 24 months.

The incidence and mortality data in this report are based on cancer registrations for 1980-2020. Despite intensive efforts to ensure the completeness of incidence data, the database is continually updated with previously unregistered cases and new information for registered cases. The data in this report were complete as of 1 September 2023. This improves the quality of data but future publications and responses to requests for data will reflect any subsequent revisions to the data and may not exactly correspond to the figures in this report.

Indices of data quality

Three indices of data quality are commonly used by Australian Cancer Registries: the mortality to incidence ratio (M/I), the proportion of cancers with histological verification (HV) and the proportion of cancers registered on the basis of death certificate only (DCO). The TCR has calculated these three indices and also determined the proportion of cancers with morphological verification (MV%) and the proportion of cancers of unknown primary site for 2020 data. The results can be found in Table 11.

Death Certificate Only (DCO)

In the past, the TCR did not register cases on the basis of DCO, unlike other State and Territory cancer registries that registered these cases and included them in their reports. Each death certificate notification is actively followed up until the time and place of diagnosis are ascertained and the diagnosis verified. If the diagnostic details cannot be confirmed morphologically, the case is registered on the basis of a clinical diagnosis . In 2020, 22 DCO cases were registered and these cases have been included in the incidence data. This accounts for 0.6 % of new cases (0.4% of males and 0.8% of females). For DCO cases, the date of death is taken as the date of diagnosis. Where there is a low DCO, as is the case for the TCR, the potential error in registration is reduced.

Table 11: Indices of data quality, Tasmania, 2020

		Males				Females			
ICD-10	Site	M/I[1]	HV[2]	MV[3]	DCO[4]	M/I[1]	HV[2]	MV[3]	DCO[4]
C00	Lip	3	100	100	0	0	100	100	0
C15	Oesophagus	51	98	98	0	50	88	88	0
C16	Stomach	65	96	98	0	50	94	94	0
C17	Small intestine	20	90	90	0	117	83	83	0
C18-C21	Colorectal	33	94	95	1	31	93	93	3
C22	Liver	44	63	63	1	109	55	64	0
C23, C24	Gallbladder	100	36	73	0	72	67	78	0
C25	Pancreas	96	47	74	0	70	52	78	1
C01-C14, C30-C32	Head and neck	29	94	97	0	16	97	100	0
C33, C34	Lung	72	78	84	0	59	81	84	1
C37, C38	Thymus etc	0	100	100	0	0	100	100	0
C43	Melanoma of skin	12	100	100	0	4	100	100	0
C44	Skin[5]	22	100	100	0	36	91	91	0
C45	Mesothelioma	131	88	94	0	100	100	100	0
C47, C49	Connective tissue	29	100	100	0	86	71	71	0
C50	Breast	12	100	100	0	17	98	98	1
C53	Cervix	-	-	-	-	39	100	100	0
C54, C55	Uterus	-	-	-	-	15	99	99	0
C51, C52, C57	Vulva etc	-	-	-	-	44	100	100	0
C56	Ovary	-	-	-	-	66	90	90	0
C61	Prostate	17	96	96	3	-	-	-	-
C62	Testis	0	100	100	0	-	-	-	-
C60, C63	Penis etc	0	100	100	0	-	-	-	-
C64	Kidney	21	95	95	0	30	100	100	0
C67	Bladder	38	95	98	0	54	96	96	0
C65, C66, C68	Renal pelvis etc	25	88	88	0	57	86	86	0
C69	Eye	50	75	100	0	0	50	50	0
C71	Brain	76	91	91	0	81	75	75	0
C70, C72	Central nervous system	400	100	100	0	0	33	33	1
C73	Thyroid	8	92	92	0	4	96	96	0
C74, C75	Other endocrine	25	100	100	0	100	100	100	0
C81-C86	All lymphomas	23	96	98	0	16	99	100	0
C88	Immunoproliferative diseases	17	67	100	0	0	86	100	0
C90	Multiple myeloma	27	89	95	1	46	88	88	1
C91-C95	All leukaemia	52	71	96	1	15	60	95	1
C26, C39, C76	Other & ill-defined sites	43	57	57	1	100	67	67	0
C80	Unspecified site	88	65	65	1	91	51	58	3
D45-D47	Myeloproliferative & myelodysplastic syndromes	61	82	100	0	57	71	81	2
C00-C96, D45-D47	All cancers[5]	35	90	93	8	31	90	93	14

[1] Mortality to incidence ratio expressed as a percentage [2] Percentage histologically verified [3] Percentage morphologically verified [4] Death certificate only [5] Excludes keratinocyte cancers

Mortality to Incidence Ratio (M/I)

One way of assessing the completeness of cancer ascertainment is the M/I. This measure is calculated by dividing the number of deaths attributed to a specific cancer in a defined population by the number of new cases of the same cancer registered during the same period in the same population. For cancers with a poor prognosis, the ratio will be close to 100%. If it exceeds 100% this may indicate that the cancer is being under-registered, but in the case of uncommon cancers, a more likely explanation is that it is a result of random fluctuations in the annual number of new cases and deaths.

Histological Verification (HV)

HV is the percentage of cases with verification by histological investigation. Histological verification of diagnosis shows that it has been possible to investigate a patient with such thoroughness that a portion of the suspected neoplasm has been removed for microscopic examination. For 2020, 91% of all male and 90% of all female registered cases had a diagnosis on the basis of tissue examination. HV includes only the cancers that were diagnosed following tissue or needle biopsy and does not include diagnoses made on the basis of cytology examination of smears or aspirates (including haematological examinations).

Morphological Verification (MV)

If we add the diagnoses based on exfoliative cytology and haematological examinations (for leukaemia) to the diagnoses based on histological examination of a tissue specimen, then the percentage of all cancers with morphological verification (MV%) in 2020 was 94% for males and 93% for females.

Unknown Primary Site

The TCR calculated the percentage of all cancers that were classified as unknown primary site (ICD-10 C80, Unspecified site), because it is one of the quality indicators used for international comparisons. In 2020, the percentage of all cases classified as unknown primary site was 2.2% (1.9% for males and 2.6% for females).

Uses of data

The information collected by the TCR is used to:

- Monitor the number of new cases of cancer in Tasmania.
- Compare local and national cancer trends.
- Plan services for cancer control and the care of people with cancer in Tasmania.
- Assist in gathering information about cancer treatment, cancer care and cancer programs.
- Provide information for research into the causes of cancer and the results of prevention, screening and treatment services.
- Contribute to Australia-wide reporting on the number of people with cancer and their eventual outcomes.

Annual reports from the TCR provide data on cancer numbers and incidence and mortality rates. It should be recognised that active follow-up is necessary to complete registrations for up to 30% of cases each year, which results in a two-year interval from year of diagnosis to date of publication of incidence data. Considerable time is spent on matching, classifying and validating cancer cases notified to the TCR. In addition, the TCR supplies data to the Australian Cancer Database and to International Association of Cancer Registries.

Requests for data

There are procedures in place to protect against potential privacy breaches, as well as to ensure the ethical integrity and scientific merit of proposals seeking to access data from the TCR.

Confidentiality of data is a requirement of the Public Health Act 1997, which can be accessed from the following URL: https://www.legislation.tas.gov.au/. The TCR cannot release data identifying an individual unless authorised by the Director of Public Health. Summary data, including number and incidence of cancer cases and deaths by cancer site, year, sex and age group, are publicly available. These can be downloaded from the Tasmanian Cancer Statistics in the TCR website (https://www.menzies.utas.edu.au/research/research-centres/tasmanian-cancer-registry/statistics).

To request data that are not publicly available, the application requirements will depend on the nature of the request. Please contact the TCR outlining your request via email to menzies.tcr@utas.edu.au or call 03 6226 7757.

Appendix B

Methods

Data sources

Tasmanian Cancer Registry

Data on the number of new cases and deaths from cancer in Tasmania between 1 January 2020 and 31 December 2020 inclusive were sourced from the TCR.

Australian Bureau of Statistics

Data on the number of Tasmanian residents by sex, age, year and Statistical Area (SA) were sourced from the Australian Bureau of Statistics population statistics.[1,6] These data were used to calculate cancer incidence and mortality rates and cancer projections.

Geographic data were sourced from the Australian Statistical Geography Standard[7], including the 2016 Remoteness Structure.[5]

For area-level socioeconomic data, this report uses the Index of Relative Socio-Economic Disadvantage (IRSD) from the 2016 Socio-Economic Indexes for Areas[4].

Statistical analysis

Incidence

Cancer incidence is defined as the number of new cases of cancer in a population during a specific period. The incidence data in this report refer to the number of primary cancers first diagnosed between 1 January and 31 December (inclusive) in a calendar year for persons who were residents of Tasmania at the time of diagnosis.

Mortality

The mortality data in this report refer to number of deaths from cancer of people who died in Tasmania between 1 January and 31 December (inclusive) in a calendar year.

Crude rates

The crude incidence rate is calculated as the number of new cases of cancer divided by the population at risk in a specified time period. The crude mortality rate substitutes deaths for new cases in this calculation. Both are conventionally expressed as annual rates per 100,000 population.

Age-specific rates

Age-specific rates are calculated by dividing the number of cases occurring in each specified age group by the corresponding population in the same age group and are expressed as an annual rate per 100,000 population.

Age-standardised rates

Rates are adjusted for age to facilitate comparisons between populations that have different age structures, e.g., between youthful and ageing communities. We use direct standardisation in which age-specific rates are used to calculate the number of cases that would have occurred if the population had the same age distribution as a standard population.

The main body of the report and Appendix C show rates standardised to the 2001 Australian Standard Population.[1] This effectively removes the influence of age structure on the summary rate, which is described as the age-standardised rate. This method may be used for both incidence and mortality calculations.

Cumulative rates and cumulative risks

The cumulative rate is calculated by summing the age-specific rate for each year of life prior to a certain age. Cumulative risk, C_{risk}, is calculated from the cumulative rate, C_{rate}, using the following formula:

$$C_{risk} = 1 - \epsilon^{-C_{rate}}$$

This report describes the cumulative rates and cumulative risks to ages 75 and 85.

Cancer projections

Future cancer incidence and mortality rates were projected using Bayesian age-period-cohort models[8] and the population projections produced by the Australian Bureau of Statistics[6].

Rates by SA4, IRSD and Remoteness Areas

Number of cancer cases from 2016-2020 (inclusive) were pooled for this analysis to ensure sufficient numbers of cases in each SA4, IRSD category and Remoteness Areas.

Standardised incidence ratios

Standardised incidence ratios are an indirect method of standardisation that can be used to remove the influence of age and allow comparisons between populations with differing age structures. Standardised incidence ratios for each SA4, IRSD category and Remoteness Area were computed using the Tasmanian population as standard.

Appendix C

Incidence and mortality tables

Table 12: Incidence by cancer site and sex, Tasmania, 2020

		Males					Females				
ICD-10	Site	N[1]	CR[2]	CR75[3]	CR85[4]	ASR[5]	N[1]	CR[2]	CR75[3]	CR85[4]	ASR[5]
C00	Lip	37	13.2	0.9	1.3	10.1	14	4.9	0.2	0.5	3.4
C01, C02	Tongue	18	6.4	0.4	0.7	4.5	9	3.2	0.2	0.3	2.4
C03	Gum	1	0.4	0.0	0.0	0.3	2	0.7	0.0	0.1	0.4
C04	Floor of mouth	5	1.8	0.1	0.1	1.3	2	0.7	0.0	0.1	0.5
C05, C06	Other mouth	5	1.8	0.1	0.2	1.2	6	2.1	0.1	0.1	1.6
C01-C06	**Oral Cavity**	**29**	**10.4**	**0.7**	**1.0**	**7.2**	**19**	**6.7**	**0.3**	**0.6**	**4.9**
C07, C08	Salivary glands	6	2.1	0.1	0.1	1.9	1	0.4	0.0	0.0	0.4
C09, C10	Oropharynx	22	7.9	0.6	0.7	6.3	4	1.4	0.1	0.1	1.2
C11	Nasopharynx	2	0.7	0.0	0.0	0.7	0	0.0	0.0	0.0	0.0
C12, C13	Hypopharynx	4	1.4	0.1	0.2	1.0	0	0.0	0.0	0.0	0.0
C09-C13	**Pharynx**	**28**	**10.0**	**0.7**	**0.9**	**8.0**	**4**	**1.4**	**0.1**	**0.1**	**1.2**
C14	Other oral	3	1.1	0.1	0.1	0.6	0	0.0	0.0	0.0	0.0
C15	Oesophagus	41	14.7	0.7	1.5	10.4	8	2.8	0.1	0.1	1.6
C16	Stomach	48	17.2	0.9	1.9	11.9	18	6.3	0.3	0.4	3.9
C17	Small intestine	10	3.6	0.2	0.3	2.7	6	2.1	0.1	0.2	1.8
C18	Colon	125	44.7	2.1	4.5	32.8	127	44.7	2.4	4.3	32.1
C19-C21	Rectum	77	27.6	1.6	2.9	22.5	74	26.0	1.2	2.0	18.3
C18-C21	**Colorectal**	**202**	**72.3**	**3.7**	**7.3**	**55.4**	**201**	**70.7**	**3.6**	**6.3**	**50.4**
C22	Liver	43	15.4	0.8	1.3	10.7	11	3.9	0.1	0.4	2.7
C23, C24	Gallbladder	11	3.9	0.1	0.5	2.8	18	6.3	0.2	0.5	3.8
C25	Pancreas	57	20.4	1.2	1.9	15.0	63	22.2	1.1	2.3	14.4
C30, C31	Nasal cavities	2	0.7	0.1	0.1	0.8	1	0.4	0.0	0.0	0.4
C32	Larynx	11	3.9	0.3	0.4	2.7	6	2.1	0.1	0.2	1.5
C01-C14, C30-C32	**Head and neck**	**79**	**28.3**	**1.9**	**2.5**	**21.2**	**31**	**10.9**	**0.6**	**1.0**	**8.5**
C33, C34	Lung	183	65.5	3.5	6.3	47.1	152	53.5	2.7	5.3	34.5
C37, C38	Thymus etc	4	1.4	0.1	0.1	1.2	1	0.4	0.0	0.0	0.2
C40, C41	Bone	2	0.7	0.1	0.1	0.8	2	0.7	0.0	0.1	0.5
C43	Melanoma of skin	221	79.1	4.9	7.2	62.7	205	72.1	4.6	6.3	57.8
C44	Skin	9	3.2	0.1	0.2	2.3	11	3.9	0.1	0.4	2.5
C45	Mesothelioma	16	5.7	0.2	0.5	4.1	2	0.7	0.0	0.1	0.5
C46	Kaposi sarcoma	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
C47, C49	Connective tissue	7	2.5	0.2	0.3	1.8	7	2.5	0.1	0.1	2.0
C48	Peritoneum & retroperitoneum	1	0.4	0.0	0.0	0.4	1	0.4	0.0	0.0	0.2
C50	Breast	8	2.9	0.1	0.3	2.1	447	157.3	10.0	13.3	117.8
C53	Cervix	-	-	-	-	-	23	8.1	0.6	0.6	7.6
C54, C55	Uterus	-	-	-	-	-	78	27.4	1.8	2.4	19.8
C51, C52, C57	Vulva etc	-	-	-	-	-	18	6.3	0.3	0.6	4.3
C56	Ovary	-	-	-	-	-	29	10.2	0.7	0.9	8.4
C58	Placenta	-	-	-	-	-	0	0.0	0.0	0.0	0.0
C51-C58	**Female reproductive organs**	**-**	**-**	**-**	**-**	**-**	**160**	**56.3**	**3.5**	**4.8**	**42.9**

[1] Number of cases [2] Crude incidence rate [3] Cumulative rate to age 75 [4] Cumulative rate to age 85 [5] Age-standardised rates per 100,000 persons (2001 Australian Standard Population)

		Males					Females				
ICD-10	Site	N[1]	CR[2]	CR_{75}[3]	CR_{85}[4]	ASR[5]	N[1]	CR[2]	CR_{75}[3]	CR_{85}[4]	ASR[5]
C61	Prostate	519	185.8	11.3	18.1	126.9	-	-	-	-	-
C62	Testis	17	6.1	0.5	0.5	6.2	-	-	-	-	-
C60, C63	Penis etc	8	2.9	0.2	0.2	2.7	-	-	-	-	-
C60-C63	**Male reproductive organs**	**544**	**194.7**	**11.9**	**18.8**	**135.8**	**-**	**-**	**-**	**-**	**-**
C64	Kidney	63	22.6	1.4	2.2	17.2	27	9.5	0.6	0.9	6.8
C67	Bladder	55	19.7	0.9	2.1	13.6	24	8.4	0.2	0.8	5.5
C65, C66, C68	Renal pelvis etc	8	2.9	0.1	0.3	2.1	7	2.5	0.1	0.3	1.5
C69	Eye	4	1.4	0.1	0.1	1.3	2	0.7	0.1	0.1	0.9
C71	Brain	33	11.8	0.8	1.1	9.5	16	5.6	0.3	0.5	4.1
C70, C72	Central nervous system	1	0.4	0.0	0.0	0.4	3	1.1	0.1	0.1	1.0
C73	Thyroid	12	4.3	0.3	0.4	3.8	24	8.4	0.6	0.7	7.1
C74, C75	Other endocrine	4	1.4	0.1	0.2	1.4	1	0.4	0.0	0.0	0.4
C81	Hodgkin disease	6	2.1	0.2	0.2	1.9	11	3.9	0.3	0.3	4.1
C82	Nodular NHL	22	7.9	0.5	0.7	6.7	26	9.1	0.6	0.9	7.0
C83	Diffuse NHL	45	16.1	0.9	1.5	12.0	44	15.5	0.8	1.4	11.1
C84	T-cell lymphoma	6	2.1	0.1	0.1	1.9	2	0.7	0.0	0.1	0.5
C85	Other NHL	11	3.9	0.1	0.5	3.6	4	1.4	0.1	0.1	1.0
C82-C85	**Non-Hodgkin's lymphoma**	**84**	**30.1**	**1.7**	**2.9**	**24.1**	**76**	**26.7**	**1.5**	**2.5**	**19.6**
C86	Other specified types of T/NK-cell lymphoma	3	1.1	0.1	0.1	0.8	0	0.0	0.0	0.0	0.0
C81-C86	**All lymphomas**	**93**	**33.3**	**1.9**	**3.2**	**26.8**	**87**	**30.6**	**1.9**	**2.8**	**23.7**
C88	Immunoproliferative diseases	6	2.1	0.1	0.2	1.8	7	2.5	0.1	0.2	1.6
C90	Multiple myeloma	37	13.2	0.4	1.4	9.6	24	8.4	0.4	0.7	5.2
C91	Lymphoid leukaemia	29	10.4	0.6	1.1	9.0	21	7.4	0.4	0.7	5.0
C91.0	Acute lymphoid leukaemia	7	2.5	0.2	0.2	3.1	2	0.7	0.1	0.1	0.7
C91.1	Chronic lymphoid leukaemia	20	7.2	0.3	0.8	5.1	18	6.3	0.4	0.6	4.1
C92	Myeloid Leukaemia	23	8.2	0.5	0.8	7.0	13	4.6	0.3	0.3	3.3
C92.0	Acute myeloid leukaemia	12	4.3	0.2	0.5	3.5	5	1.8	0.1	0.1	1.2
C92.1	Chronic myeloid leukaemia	4	1.4	0.1	0.1	1.5	4	1.4	0.1	0.1	1.2
C93-C95	Other and unspecified leukaemia	4	1.4	0.0	0.2	1.0	6	2.1	0.1	0.1	1.2
C91-C95	**All leukaemia**	**56**	**20.0**	**1.1**	**2.1**	**16.9**	**40**	**14.1**	**0.8**	**1.2**	**9.5**
C26, C39, C76	Other & ill-defined sites	7	2.5	0.0	0.2	1.9	6	2.1	0.1	0.1	1.2
C96	Other haematopoietic	2	0.7	0.0	0.1	0.5	1	0.4	0.0	0.0	0.4
C80	Unspecified site	34	12.2	0.4	1.3	8.7	43	15.1	0.4	1.1	8.9
D45-D47	Myeloproliferative & myelodysplastic syndromes	28	10.0	0.4	1.0	8.4	21	7.4	0.4	0.7	5.0
C00-C96, D45-D47	**All cancers (excluding KCs)**	**1961**	**702.0**	**39.6**	**68.0**	**520.6**	**1687**	**593.7**	**33.3**	**52.4**	**431.0**

[1] Number of cases [2] Crude incidence rate [3] Cumulative rate to age 75 [4] Cumulative rate to age 85 [5] Age-standardised incidence rates per 100,000 persons (2001 Australian Standard Population)

Table 13: Mortality by cancer site and sex, Tasmania, 2020

		Males					Females				
ICD-10	**Site**	**N**[1]	**CR**[2]	**CR75**[3]	**CR85**[4]	**ASR**[5]	**N**[1]	**CR**[2]	**CR75**[3]	**CR85**[4]	**ASR**[5]
C00	Lip	1	0.4	0.0	0.0	0.2	0	0.0	0.0	0.0	0.0
C01, C02	Tongue	3	1.1	0.0	0.1	0.7	0	0.0	0.0	0.0	0.0
C03	Gum	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
C04	Floor of mouth	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
C05, C06	Other mouth	2	0.7	0.1	0.1	0.6	0	0.0	0.0	0.0	0.0
C01-C06	**Oral Cavity**	**5**	**1.8**	**0.1**	**0.2**	**1.4**	**0**	**0.0**	**0.0**	**0.0**	**0.0**
C07, C08	Salivary glands	3	1.1	0.0	0.0	0.8	0	0.0	0.0	0.0	0.0
C09, C10	Oropharynx	6	2.1	0.1	0.2	1.6	2	0.7	0.0	0.1	0.5
C11	Nasopharynx	1	0.4	0.0	0.0	0.3	2	0.7	0.1	0.1	0.4
C12, C13	Hypopharynx	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
C09-C13	**Pharynx**	**7**	**2.5**	**0.1**	**0.2**	**1.9**	**4**	**1.4**	**0.1**	**0.1**	**0.9**
C14	Other oral	2	0.7	0.1	0.1	0.4	0	0.0	0.0	0.0	0.0
C15	Oesophagus	21	7.5	0.4	0.8	5.4	4	1.4	0.0	0.0	0.9
C16	Stomach	31	11.1	0.6	0.8	8.2	9	3.2	0.1	0.2	1.9
C17	Small intestine	2	0.7	0.1	0.1	0.4	7	2.5	0.2	0.2	1.7
C18	Colon	40	14.3	0.5	1.4	10.8	43	15.1	0.8	1.3	9.7
C19-C21	Rectum	26	9.3	0.4	0.8	7.0	19	6.7	0.3	0.5	4.4
C18-C21	**Colorectal**	**66**	**23.6**	**0.8**	**2.2**	**17.8**	**62**	**21.8**	**1.1**	**1.7**	**14.1**
C22	Liver	19	6.8	0.3	0.6	4.8	12	4.2	0.3	0.4	3.1
C23, C24	Gallbladder	11	3.9	0.2	0.4	2.7	13	4.6	0.0	0.3	2.6
C25	Pancreas	55	19.7	0.8	2.2	14.2	44	15.5	0.7	1.4	9.6
C30, C31	Nasal cavities	2	0.7	0.0	0.0	0.5	1	0.4	0.0	0.0	0.2
C32	Larynx	4	1.4	0.0	0.1	1.1	0	0.0	0.0	0.0	0.0
C01-C14, C30-C32	**Head and neck**	**23**	**8.2**	**0.4**	**0.7**	**6.0**	**5**	**1.8**	**0.1**	**0.2**	**1.1**
C33, C34	Lung	131	46.9	2.2	4.7	33.6	89	31.3	1.6	3.2	20.6
C37, C38	Thymus etc	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
C40, C41	Bone	1	0.4	0.0	0.0	0.4	1	0.4	0.0	0.0	0.3
C43	Melanoma of skin	27	9.7	0.4	1.1	7.4	8	2.8	0.2	0.3	2.1
C44	Skin	2	0.7	0.0	0.1	0.5	4	1.4	0.0	0.1	0.8
C45	Mesothelioma	21	7.5	0.2	0.9	5.3	2	0.7	0.0	0.1	0.4
C46	Kaposi sarcoma	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
C47, C49	Connective tissue	2	0.7	0.0	0.1	0.5	6	2.1	0.1	0.2	1.3
C48	Peritoneum & retroperitoneum	0	0.0	0.0	0.0	0.0	2	0.7	0.0	0.0	0.4
C50	Breast	1	0.4	0.0	0.0	0.2	78	27.4	1.4	2.1	17.7
C53	Cervix	-	-	-	-	-	9	3.2	0.2	0.2	3.0
C54, C55	Uterus	-	-	-	-	-	12	4.2	0.2	0.3	2.7
C51, C52, C57	Vulva etc	-	-	-	-	-	8	2.8	0.1	0.2	1.6
C56	Ovary	-	-	-	-	-	19	6.7	0.4	0.5	4.1
C51-C58	**Female reproductive organs**	**-**	**-**	**-**	**-**	**-**	**54**	**19.0**	**0.9**	**1.5**	**12.7**
C61	Prostate	88	31.5	1.0	2.8	22.2	-	-	-	-	-
C62	Testis	0	0.0	0.0	0.0	0.0	-	-	-	-	-
C60, C63	Penis etc	0	0.0	0.0	0.0	0.0	-	-	-	-	-
C60-C63	**Male reproductive organs**	**88**	**31.5**	**1.0**	**2.8**	**22.2**	**-**	**-**	**-**	**-**	**-**

[1] Number of cases [2] Crude incidence rate [3] Cumulative rate to age 75 [4] Cumulative rate to age 85 [5] Age-standardised rates per 100,000 persons (2001 Australian Standard Population)

		Males					Females				
ICD-10	**Site**	**N**[1]	**CR**[2]	**CR$_{75}$**[3]	**CR$_{85}$**[4]	**ASR**[5]	**N**[1]	**CR**[2]	**CR$_{75}$**[3]	**CR$_{85}$**[4]	**ASR**[5]
C64	Kidney	13	4.7	0.3	0.5	3.6	8	2.8	0.1	0.2	2.0
C67	Bladder	21	7.5	0.3	0.8	5.2	13	4.6	0.1	0.2	2.6
C65, C66, C68	Renal pelvis etc	2	0.7	0.0	0.1	0.5	4	1.4	0.0	0.1	0.8
C69	Eye	2	0.7	0.1	0.1	0.4	0	0.0	0.0	0.0	0.0
C71	Brain	25	8.9	0.5	0.9	6.4	13	4.6	0.2	0.5	3.6
C70, C72	Central nervous system	4	1.4	0.1	0.1	1.3	0	0.0	0.0	0.0	0.0
C73	Thyroid	1	0.4	0.0	0.0	0.3	1	0.4	0.0	0.1	0.2
C74, C75	Other endocrine	1	0.4	0.0	0.0	0.3	1	0.4	0.0	0.0	0.4
C81	Hodgkin disease	3	1.1	0.0	0.1	0.8	1	0.4	0.0	0.0	0.2
C82	Nodular NHL	3	1.1	0.0	0.2	0.9	0	0.0	0.0	0.0	0.0
C83	Diffuse NHL	12	4.3	0.2	0.5	3.0	12	4.2	0.1	0.3	2.5
C84	T-cell lymphoma	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
C85	Other NHL	1	0.4	0.0	0.1	0.3	1	0.4	0.0	0.0	0.3
C82-C85	**Non-Hodgkin's lymphoma**	**16**	**5.7**	**0.2**	**0.8**	**4.2**	**13**	**4.6**	**0.1**	**0.3**	**2.7**
C86	Other specified types of T/NK-cell lymphoma	2	0.7	0.0	0.0	0.6	0	0.0	0.0	0.0	0.0
C81-C86	**All lymphomas**	**21**	**7.5**	**0.2**	**0.9**	**5.5**	**14**	**4.9**	**0.1**	**0.3**	**2.9**
C88	Immunoproliferative diseases	1	0.4	0.0	0.0	0.3	0	0.0	0.0	0.0	0.0
C90	Multiple myeloma	10	3.6	0.2	0.3	2.4	11	3.9	0.1	0.4	2.4
C91	Lymphoid leukaemia	6	2.1	0.1	0.3	1.5	3	1.1	0.0	0.0	0.6
C91.0	Acute lymphoid leukaemia	3	1.1	0.1	0.1	0.7	0	0.0	0.0	0.0	0.0
C91.1	Chronic lymphoid leukaemia	3	1.1	0.0	0.1	0.8	3	1.1	0.0	0.0	0.6
C92	Myeloid Leukaemia	22	7.9	0.2	1.0	6.0	3	1.1	0.1	0.1	0.6
C92.0	Acute myeloid leukaemia	16	5.7	0.2	0.6	4.3	3	1.1	0.1	0.1	0.6
C92.1	Chronic myeloid leukaemia	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
C93-C95	Other and unspecified leukaemia	1	0.4	0.0	0.1	0.3	0	0.0	0.0	0.0	0.0
C91-C95	**All leukaemia**	**29**	**10.4**	**0.3**	**1.3**	**7.7**	**6**	**2.1**	**0.1**	**0.1**	**1.2**
C26, C39, C76	Other & ill-defined sites	3	1.1	0.0	0.0	0.8	6	2.1	0.1	0.2	1.2
C96	Other haematopoietic	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
C80	Unspecified site	30	10.7	0.4	1.1	7.8	39	13.7	0.2	1.0	8.0
D45-D47	Myeloproliferative & myelodysplastic syndromes	17	6.1	0.2	0.6	4.4	12	4.2	0.0	0.4	2.6
C00-C96, D45-D47	**All cancers (excluding KCs)**	**679**	**243.1**	**10.0**	**24.3**	**175.7**	**523**	**184.0**	**7.6**	**15.4**	**118.0**

[1] Number of cases [2] Crude incidence rate [3] Cumulative rate to age 75 [4] Cumulative rate to age 85 [5] Age-standardised incidence rates per 100,000 persons (2001 Australian Standard Population)

References

1. Australian Bureau of Statistics. National, State and Territory Population. https://www.abs.gov.au/statistics/people/population/national-state-and-territory-population/latest-release#data-downloads-data-cubes. Published 2023.

2. World Health Organization. *International Classification of Diseases for Oncology (ICD-o)*. 3rd ed., 1st revision. World Health Organization; 2013.

3. Australian Consortium for Classification Development. *International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification*. 11th ed. Independent Hospital Pricing Authority; 2019.

4. Australian Bureau of Statistics. Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA), Australia, 2016. https://www.abs.gov.au/ausstats/abs@.nsf/mf/2033.0.55.001. Published 2018.

5. Australian Bureau of Statistics. Australian Statistical Geography Standard (ASGS): Volume 5 - Remoteness Structure, July 2016. https://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/1270.0.55.005Main%20Features5July%202016. Published 2018.

6. Australian Bureau of Statistics. Population Projections, Australia. https://www.abs.gov.au/statistics/people/population/population-projections-australia/latest-release. Published 2018.

7. Australian Bureau of Statistics. Australian Statistical Geography Standard (ASGS): Volume 1 - Main Structure and Greater Capital City Statistical Areas, July 2016. https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/1270.0.55.001~July%202016~Main%20Features~ABS%20structures~10007. Published 2016.

8. Rue H, Martino S, Chopin N. Approximate Bayesian Inference for Latent Gaussian Models by Using Integrated Nested Laplace Approximations. *Journal of the Royal Statistical Society Series B: Statistical Methodology*. 2009;71(2):319-392.