

Australian Capital Territory

Registration area

The Australian Capital Territory (ACT) covers an area of approximately 2400 km² and is surrounded on all sides by the state of New South Wales (NSW). Almost all the ACT residents live in metropolitan Canberra although 85% of the Territory's land mass is devoted to national park, nature reserves, pine plantations and properties. The population at the most recent census in 1996 was 308 000, which represents about 1.7% of the Australian population. The estimated median age in 1998 was 32.1 years.

Cancer care facilities

General health care in the region is overseen by the ACT Department of Health and Community Care in partnership with the service providers. The ACT has a comprehensive range of cancer prevention, early detection, treatment, community care and palliative services available to the local community, in both the public and private sectors. The Canberra Hospital is the principal cancer care provider in the ACT and surrounding NSW region and offers expertise in surgery, medical and radiation oncology and haematology services. The Canberra Hospital is active in cancer research and clinical trials.

There is a strong network of consumer and carer support groups and the ACT Cancer Society is well supported by service providers and the ACT community.

Registry structure and methods

The cancer registry is the agency established under the Public Health (Cancer Reporting) Regulations gazetted in 1994, to receive notifications of cancer in the ACT. Previously, the NSW Cancer Registry had been collecting data for the ACT since 1972, although notification was voluntary.

The registry is funded by the Department of Health and Community Care. The registry is located at the Canberra Hospital in Woden, ACT. Since the regulations came into effect in July 1994, notification of malignant neoplasms has been mandatory for all ACT hospitals (public, private and day), radiotherapy departments, pathology laboratories and nursing homes. Currently, data are received from 18 sources. These are all paper notifications, with the exception of the Department of Radiation Oncology at the Canberra Hospital. The forms are collated and forwarded onto the NSW Cancer Registry which processes all new cases of cancer for the ACT. Data on deaths from cancer is obtained from the ACT Registrar of Births, Deaths and Marriages.

Interpreting the results

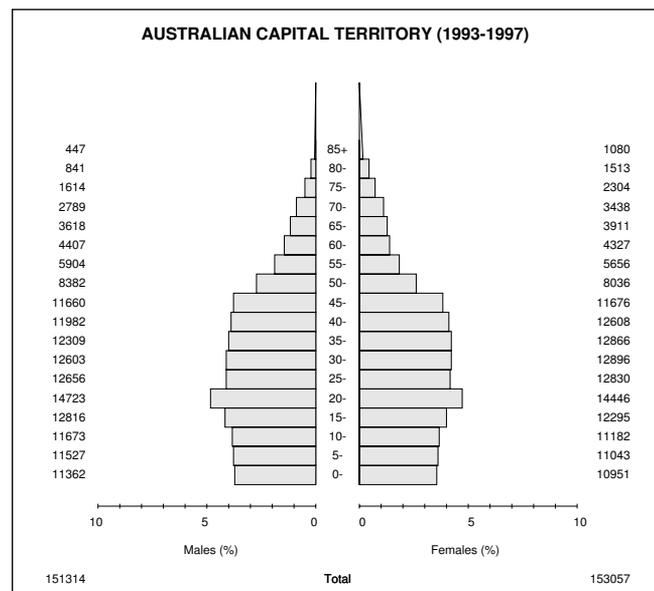
Under the current arrangements, it is unlikely that any referred cases will be missed. Before 1994, voluntary reporting led to a dramatic under-reporting of cancer cases. Since 1994, the reporting

of cancer cases has improved steadily to a level at or near 100%. For example, the age-standardized rate for malignant melanoma of the skin for males was 30.6 in the 1988–92 statistics, and 40.7 in the 1994–96 statistics.

Use of the data

The registry monitors the incidence and trends in cancer for ACT residents. With regard to the small numbers involved in the ACT cancer statistics, reports on incidence and mortality data are produced five-yearly.

Record information is made available to approved medical researchers engaged in studies that are considered by the ACT Health Ethics Committee to be of importance to the community.



Source of population

1991 and 1996 are census populations, adjusted for under-enumeration and Australian residents temporarily overseas. The intercensal estimates are obtained from the previous census by advancing age and allowing for births, deaths and migration. They are adjusted in the light of the succeeding census.

Ref. Australian Bureau of Statistics. Population by age and sex: Australian States and Territories June 1992 to June 1997. ABS Catalogue no. 3201.0 (1997) Canberra, Australian Bureau of Statistics.

Notes on the data

† C44 not available.

AUSTRALIAN CAPITAL TERRITORY (1993-1997)

SITE	MALE						FEMALE						ICD-10
	No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates 0-64 (percent)	Cum. rates 0-74 (percent)	No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates 0-64 (percent)	Cum. rates 0-74 (percent)	
Lip	27	1.1	3.6	3.6	0.28	0.43	14	0.7	1.8	1.8	0.11	0.24	C00
Tongue	15	0.6	2.0	2.0	0.09	0.25	4	0.2	0.5	0.5	0.01	0.06	C01-02
Mouth	15	0.6	2.0	2.2	0.22	0.28	12	0.6	1.6	1.4	0.05	0.19	C03-06
Salivary glands	14	0.6	1.9	1.8	0.07	0.13	7	0.3	0.9	0.6	0.02	0.02	C07-08
Tonsil	7	0.3	0.9	0.9	0.10	0.10	4	0.2	0.5	0.6	0.05	0.08	C09
Other oropharynx	3	0.1	0.4	0.4	0.04	0.04	0	0.0	0.0	0.0	0.00	0.00	C10
Nasopharynx	7	0.3	0.9	1.1	0.08	0.08	2	0.1	0.3	0.2	0.02	0.02	C11
Hypopharynx	5	0.2	0.7	0.7	0.03	0.10	0	0.0	0.0	0.0	0.00	0.00	C12-13
Pharynx unspecified	2	0.1	0.3	0.4	0.00	0.03	1	0.0	0.1	0.2	0.02	0.02	C14
Oesophagus	36	1.4	4.8	5.2	0.20	0.68	20	0.9	2.6	2.3	0.08	0.30	C15
Stomach	64	2.6	8.5	9.1	0.46	1.00	40	1.9	5.2	4.5	0.14	0.46	C16
Small intestine	7	0.3	0.9	1.0	0.07	0.10	6	0.3	0.8	0.8	0.05	0.08	C17
Colon	223	8.9	29.5	32.3	1.82	4.01	181	8.4	23.7	21.5	1.12	2.55	C18
Rectum	104	4.2	13.7	14.7	0.81	1.90	86	4.0	11.2	9.9	0.52	1.11	C19-20
Anus	3	0.1	0.4	0.5	0.02	0.05	4	0.2	0.5	0.5	0.04	0.04	C21
Liver	20	0.8	2.6	2.7	0.07	0.36	9	0.4	1.2	1.2	0.03	0.11	C22
Gallbladder etc.	12	0.5	1.6	1.6	0.03	0.16	15	0.7	2.0	1.5	0.06	0.12	C23-24
Pancreas	50	2.0	6.6	7.4	0.38	0.81	35	1.6	4.6	3.9	0.16	0.38	C25
Nose, sinuses etc.	3	0.1	0.4	0.3	0.03	0.03	5	0.2	0.7	0.6	0.04	0.06	C30-31
Larynx	25	1.0	3.3	3.8	0.20	0.51	4	0.2	0.5	0.5	0.02	0.08	C32
Trachea, bronchus and lung	202	8.1	26.7	29.4	1.34	3.74	141	6.6	18.4	17.3	0.84	2.18	C33-34
Other thoracic organs	1	0.0	0.1	0.1	0.00	0.00	1	0.0	0.1	0.1	0.00	0.00	C37-38
Bone	6	0.2	0.8	0.8	0.06	0.09	6	0.3	0.8	0.8	0.05	0.05	C40-41
Melanoma of skin	256	10.3	33.8	33.2	2.09	3.84	214	10.0	28.0	25.4	1.93	2.68	C43
†Other skin													C44
Mesothelioma	11	0.4	1.5	1.7	0.10	0.19	3	0.1	0.4	0.4	0.00	0.05	C45
Kaposi sarcoma	7	0.3	0.9	0.7	0.05	0.05	0	0.0	0.0	0.0	0.00	0.00	C46
Connective and soft tissue	14	0.6	1.9	2.1	0.10	0.17	12	0.6	1.6	1.5	0.07	0.21	C47+C49
Breast	4	0.2	0.5	0.5	0.02	0.02	682	31.7	89.1	81.8	6.15	9.42	C50
Vulva							11	0.5	1.4	1.3	0.06	0.14	C51
Vagina							1	0.0	0.1	0.1	0.00	0.03	C52
Cervix uteri							68	3.2	8.9	7.6	0.60	0.80	C53
Corpus uteri							83	3.9	10.8	10.5	0.63	1.32	C54
Uterus unspecified							2	0.1	0.3	0.2	0.00	0.03	C55
Ovary							73	3.4	9.5	9.0	0.63	1.07	C56
Other female genital organs							2	0.1	0.3	0.3	0.00	0.05	C57
Placenta							0	0.0	0.0	0.0	0.00	0.00	C58
Penis	4	0.2	0.5	0.6	0.03	0.06							C60
Prostate	750	30.0	99.1	112.3	4.13	15.00							C61
Testis	56	2.2	7.4	6.1	0.47	0.47							C62
Other male genital organs	1	0.0	0.1	0.1	0.01	0.01							C63
Kidney	57	2.3	7.5	7.7	0.42	0.94	27	1.3	3.5	3.2	0.13	0.35	C64
Renal pelvis	5	0.2	0.7	0.6	0.02	0.10	5	0.2	0.7	0.6	0.02	0.05	C65
Ureter	2	0.1	0.3	0.2	0.00	0.00	2	0.1	0.3	0.2	0.01	0.04	C66
Bladder	76	3.0	10.0	11.3	0.26	1.29	23	1.1	3.0	2.7	0.13	0.26	C67
Other urinary organs	1	0.0	0.1	0.1	0.00	0.04	1	0.0	0.1	0.1	0.00	0.03	C68
Eye	15	0.6	2.0	2.0	0.10	0.20	6	0.3	0.8	0.7	0.06	0.06	C69
Brain, nervous system	62	2.5	8.2	8.5	0.48	0.99	35	1.6	4.6	4.4	0.29	0.46	C70-72
Thyroid	11	0.4	1.5	1.4	0.10	0.17	41	1.9	5.4	4.4	0.31	0.34	C73
Adrenal gland	3	0.1	0.4	0.6	0.03	0.03	3	0.1	0.4	0.4	0.02	0.02	C74
Other endocrine	0	0.0	0.0	0.0	0.00	0.00	0	0.0	0.0	0.0	0.00	0.00	C75
Hodgkin disease	17	0.7	2.2	2.0	0.13	0.16	19	0.9	2.5	2.4	0.15	0.18	C81
Non-Hodgkin lymphoma	97	3.9	12.8	12.8	0.63	1.41	89	4.1	11.6	10.5	0.51	1.36	C82-85,C96
Immunoproliferative diseases	0	0.0	0.0	0.0	0.00	0.00	1	0.0	0.1	0.1	0.00	0.00	C88
Multiple myeloma	33	1.3	4.4	4.9	0.27	0.55	18	0.8	2.4	1.9	0.05	0.19	C90
Lymphoid leukaemia	36	1.4	4.8	5.2	0.33	0.53	27	1.3	3.5	4.1	0.23	0.34	C91
Myeloid leukaemia	34	1.4	4.5	4.6	0.21	0.42	27	1.3	3.5	3.4	0.16	0.41	C92-94
Leukaemia unspecified	2	0.1	0.3	0.3	0.00	0.06	3	0.1	0.4	0.3	0.00	0.00	C95
Other and unspecified	92	3.7	12.2	13.2	0.60	1.47	74	3.4	9.7	7.8	0.25	0.72	O&U
All sites													ALL
All sites but C44	2497	100.0	330.0	354.6	16.97	42.98	2149	100.0	280.8	255.8	15.82	28.77	ALLbC44

†See note following population pyramid

Australia, New South Wales

Registration area

The New South Wales (NSW) Central Cancer Registry covers the population of New South Wales. There were 6 272 784 residents in 1997; of these two-thirds live in the capital city, Sydney. NSW is the most populated state of the six federated states, with 34% of the population of Australia. The area of NSW is 801 400 km², comprising 10.4% of the total area of Australia.

At 30 June 1997, 21% of the population was aged under 15 years of age, 66% between 15 and 65 and 13% 65 years and older. By comparison, in 1972, the first year of registration of cancer in New South Wales, 9% of the population was aged over 65 years.

At the population census in 1996, 101 485 people reported being of indigenous origin. This represents 1.7% of the total population of NSW. The most common countries of birth were Australia (76%), the United Kingdom and Ireland (5%), New Zealand (1.5%), the former Yugoslav Republic (1.2%), Italy (1.2%) and China (1.2%).

Cancer care facilities

There are 17 metropolitan and rural Area Health Services that are responsible for providing cancer services. These Area Health Services provide hospital inpatient, outpatient and community health care and specialist Cancer Care Centres for their residents. Radiotherapy and chemotherapy services are predominantly outpatient and provided in specialist Cancer Care Facilities. Cancer services are also provided by private facilities.

Notification of malignant neoplasms is a statutory requirement and currently operates under the authority of the Public Health Act of 1991. All public and private hospitals, departments of radiation oncology, nursing homes and pathology laboratories, outpatient departments and day procedure centres are required by law to notify the NSW Central Cancer Registry when cancer is diagnosed or treated by them. Medical practitioners are not required to notify but provide additional information on request.

Registry structure and methods

The NSW Central Cancer Registry is managed by the NSW Cancer Council and funded by the NSW Health Department. There are 17 full time equivalent staff employed at the registry. These include a manager, operations coordinator, data-processing supervisor, biostatistician, analyst programmer, medical adviser, medical coders and data entry clerks. The registry maintains a register of cancer diagnoses since 1972. The information collected includes name, address, date of birth, country of birth, clinical details about the cancer, the notifying institution and doctor. All information sent to the registry is kept confidential, held under security and protected by the Public Health Act.

Forty per cent of all notifications are received electronically; the remaining notifications and pathology reports are paper-based. Death registrations are provided by the Registrar of Births, Deaths and Marriages and received regularly. Coded death registrations are also received from the Australia Bureau of Statistics. The registry routinely matches cancer cases against deaths in Australia from all causes.

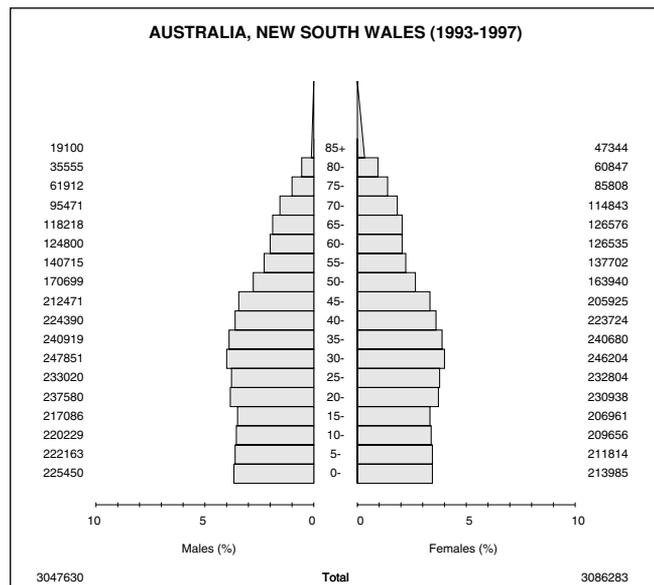
Interpreting the results

As notification is mandatory and provided through a number of different sources (on average there are five notifications per case), the level of enumeration is likely to be high.

Use of the data

An annual statistical report is published that provides information on the number of new cases and deaths by counts, rates and trends over time. The registry contributes to the prevention, planning, control and treatment of cancer in the population of NSW by providing timely accurate data. It contributes to national and international publications and a variety of specialist reports by cancer site. The NSW Central Cancer registry has introduced a web-based reporting module that is updated with each year of completed registered cases and deaths. This module includes additional reports by local government area, socioeconomic status and country of birth and can be accessed using www.statistics.cancercouncil.com.au.

Unit record information is made available to approved medical researchers engaged in studies that are considered by the NSW Cancer Council Ethics Committee and the Department of Health Ethics Committee to benefit the wider community. Ethically approved studies investigating melanoma, colorectal cancer, prostate cancer and non-Hodgkin lymphoma are currently in progress.



Source of population

1991 and 1996 are census populations, adjusted for under-enumeration and Australian residents temporarily overseas. The intercensal estimates are obtained from the previous census by advancing age and allowing for births, deaths and migration. They are adjusted in the light of the succeeding census.

Ref. Australian Bureau of Statistics. Population by age and sex: Australian States and Territories June 1992 to June 1997. ABS Catalogue no. 3201.0 (1997) Canberra, Australian Bureau of Statistics.

Notes on the data

† C44 not available.

AUSTRALIA, NEW SOUTH WALES (1993-1997)

SITE	MALE						FEMALE						ICD-10
	No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates 0-64 (percent)	Cum. rates 0-74 (percent)	No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates 0-64 (percent)	Cum. rates 0-74 (percent)	
Lip	995	1.3	6.5	5.1	0.32	0.53	326	0.6	2.1	1.3	0.07	0.14	C00
Tongue	512	0.7	3.4	2.7	0.18	0.33	208	0.4	1.3	0.9	0.06	0.11	C01-02
Mouth	510	0.7	3.3	2.7	0.18	0.34	279	0.5	1.8	1.1	0.06	0.12	C03-06
Salivary glands	199	0.3	1.3	1.0	0.05	0.11	121	0.2	0.8	0.6	0.04	0.06	C07-08
Tonsil	166	0.2	1.1	0.9	0.06	0.11	69	0.1	0.4	0.3	0.02	0.04	C09
Other oropharynx	80	0.1	0.5	0.4	0.03	0.05	28	0.0	0.2	0.1	0.01	0.01	C10
Nasopharynx	169	0.2	1.1	0.9	0.06	0.10	78	0.1	0.5	0.4	0.03	0.04	C11
Hypopharynx	282	0.4	1.9	1.5	0.09	0.20	48	0.1	0.3	0.2	0.01	0.03	C12-13
Pharynx unspecified	77	0.1	0.5	0.4	0.03	0.05	29	0.0	0.2	0.1	0.00	0.01	C14
Oesophagus	932	1.2	6.1	4.5	0.23	0.54	568	1.0	3.7	1.9	0.07	0.23	C15
Stomach	2088	2.8	13.7	9.7	0.44	1.11	1106	1.9	7.2	4.0	0.19	0.43	C16
Small intestine	174	0.2	1.1	0.9	0.05	0.10	135	0.2	0.9	0.6	0.03	0.07	C17
Colon	6074	8.1	39.9	28.9	1.42	3.47	5627	9.6	36.5	21.8	1.15	2.55	C18
Rectum	3752	5.0	24.6	18.2	0.99	2.26	2368	4.0	15.3	9.6	0.56	1.14	C19-20
‡Anus	178	0.2	1.2	0.9	0.05	0.10	225	0.4	1.5	0.9	0.05	0.09	C21
Liver	734	1.0	4.8	3.7	0.20	0.47	251	0.4	1.6	1.0	0.05	0.12	C22
Gallbladder etc.	425	0.6	2.8	1.9	0.08	0.23	548	0.9	3.6	2.0	0.09	0.23	C23-24
Pancreas	1394	1.9	9.1	6.4	0.27	0.76	1435	2.4	9.3	5.0	0.21	0.55	C25
Nose, sinuses etc.	142	0.2	0.9	0.7	0.05	0.08	77	0.1	0.5	0.3	0.02	0.03	C30-31
Larynx	932	1.2	6.1	4.7	0.29	0.61	107	0.2	0.7	0.5	0.03	0.06	C32
Trachea, bronchus and lung	8982	12.0	58.9	42.0	1.86	5.36	4101	7.0	26.6	16.8	0.89	2.16	C33-34
Other thoracic organs	79	0.1	0.5	0.4	0.02	0.04	49	0.1	0.3	0.2	0.01	0.02	C37-38
Bone	161	0.2	1.1	1.0	0.06	0.08	118	0.2	0.8	0.7	0.05	0.06	C40-41
Melanoma of skin	7308	9.8	48.0	36.9	2.28	4.10	5295	9.0	34.3	25.9	1.86	2.69	C43
†Other skin													C44
Mesothelioma	645	0.9	4.2	3.0	0.14	0.39	95	0.2	0.6	0.4	0.02	0.05	C45
Kaposi sarcoma	469	0.6	3.1	2.5	0.20	0.22	17	0.0	0.1	0.1	0.00	0.01	C46
Connective and soft tissue	431	0.6	2.8	2.4	0.14	0.22	303	0.5	2.0	1.5	0.09	0.14	C47+C49
Breast	121	0.2	0.8	0.6	0.03	0.07	16784	28.5	108.8	80.7	6.08	9.14	C50
Vulva							351	0.6	2.3	1.3	0.07	0.15	C51
Vagina							99	0.2	0.6	0.4	0.03	0.04	C52
Cervix uteri							1658	2.8	10.7	8.3	0.63	0.84	C53
Corpus uteri							2094	3.6	13.6	9.4	0.64	1.17	C54
Uterus unspecified							86	0.1	0.6	0.4	0.03	0.04	C55
Ovary							1790	3.0	11.6	8.2	0.55	0.93	C56
Other female genital organs							71	0.1	0.5	0.3	0.02	0.04	C57
Placenta							8	0.0	0.1	0.0	0.00	0.00	C58
Penis	101	0.1	0.7	0.5	0.03	0.06							C60
Prostate	19977	26.7	131.1	90.1	3.11	11.53							C61
Testis	887	1.2	5.8	5.1	0.39	0.40							C62
Other male genital organs	35	0.0	0.2	0.2	0.01	0.02							C63
Kidney	1751	2.3	11.5	8.7	0.49	1.06	1036	1.8	6.7	4.6	0.27	0.51	C64
Renal pelvis	210	0.3	1.4	1.0	0.04	0.12	351	0.6	2.3	1.3	0.06	0.18	C65
Ureter	105	0.1	0.7	0.5	0.02	0.06	61	0.1	0.4	0.2	0.01	0.03	C66
Bladder	2702	3.6	17.7	12.3	0.48	1.44	932	1.6	6.0	3.3	0.14	0.40	C67
Other urinary organs	39	0.1	0.3	0.2	0.01	0.02	13	0.0	0.1	0.0	0.00	0.00	C68
Eye	236	0.3	1.5	1.3	0.07	0.13	173	0.3	1.1	0.8	0.05	0.08	C69
Brain, nervous system	1225	1.6	8.0	6.9	0.42	0.70	956	1.6	6.2	5.0	0.30	0.51	C70-72
Thyroid	407	0.5	2.7	2.2	0.15	0.22	1162	2.0	7.5	6.3	0.49	0.58	C73
Adrenal gland	56	0.1	0.4	0.5	0.02	0.03	47	0.1	0.3	0.4	0.02	0.02	C74
Other endocrine	33	0.0	0.2	0.2	0.01	0.02	12	0.0	0.1	0.1	0.01	0.01	C75
Hodgkin disease	341	0.5	2.2	2.0	0.13	0.18	270	0.5	1.7	1.6	0.10	0.13	C81
Non-Hodgkin lymphoma	2828	3.8	18.6	14.2	0.83	1.54	2370	4.0	15.4	10.0	0.59	1.12	C82-85,C96
Immunoproliferative diseases	44	0.1	0.3	0.2	0.01	0.02	22	0.0	0.1	0.1	0.00	0.01	C88
Multiple myeloma	868	1.2	5.7	4.1	0.20	0.50	666	1.1	4.3	2.5	0.12	0.30	C90
Lymphoid leukaemia	899	1.2	5.9	5.1	0.27	0.48	572	1.0	3.7	2.9	0.14	0.25	C91
Myeloid leukaemia	1057	1.4	6.9	5.2	0.25	0.52	835	1.4	5.4	3.5	0.19	0.35	C92-94
Leukaemia unspecified	86	0.1	0.6	0.4	0.01	0.04	82	0.1	0.5	0.3	0.01	0.02	C95
Other and unspecified	2974	4.0	19.5	13.8	0.59	1.53	2745	4.7	17.8	9.7	0.43	1.05	O&U
All sites													ALL
All sites but C44	74872	100.0	491.3	359.0	17.36	42.62	58857	100.0	381.4	259.8	16.67	29.10	ALLbC44

‡37.6% of cases are anorectal tumours

†See note following population pyramid

Australia, Northern Territory

Registration area

The registry covers the entire population of the Northern Territory (NT), a sparsely settled area of 1.4 million km² in central and northern Australia, with a population of 200 000 people, 75% of whom live in five urban areas. The population has a very young age distribution, with only 3% of the population aged over 65 years. 29% of the population are indigenous Australians, most of whom live in small, remote communities.

Cancer care facilities

There are six hospitals, including two referral hospitals, and a well developed private health care system in the larger towns. There is no specialist cancer treatment centre nor radiotherapy facility. Patients requiring treatment not available locally are transferred to specialist treatment centres in an interstate capital city. There is an extensive network of primary health care centres in remote communities.

Registry structure and methods

The registry is located within and fully funded by the Epidemiology Branch of the state health department and staffed by one full-time research assistant. Data processing, coding and database maintenance are performed under contract by the South Australian Cancer Registry. Data analysis and publication are performed by Epidemiology Branch staff.

Notification of cases from the three pathology laboratories in the NT and the Registry of Births, Deaths and Marriages is mandatory under the Cancer (Registration) Act. The registry also performs active case detection from hospital inpatient morbidity data and follow-up from hospital medical records and medical practitioners for incomplete notifications. Death registration in the NT is complete. The Hospital Morbidity Dataset is complete for the five public hospitals, but does not include inpatient data for the one private hospital. There is a well established system to exchange data with interstate cancer registries for cases notified in one state but resident in another at the time of diagnosis.

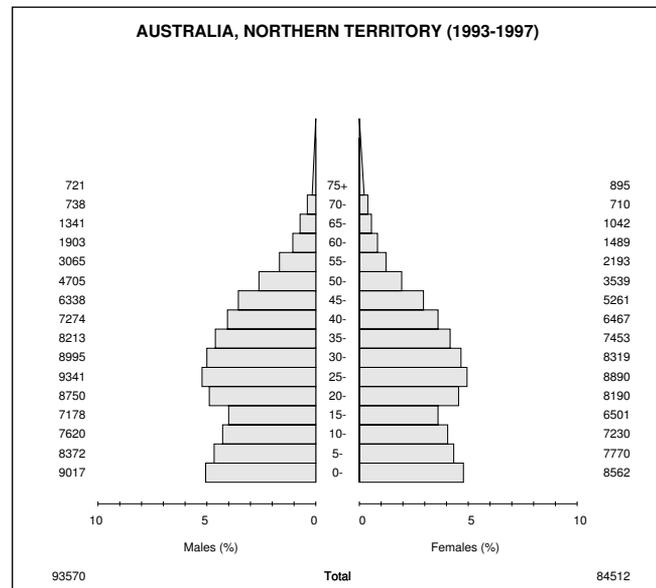
Interpreting the results

A recent data quality audit of the register estimated that case ascertainment may be approximately 6% incomplete, in comparison with registration rates of other Australian registries. A breast cancer screening service commenced operation in 1994. There is evidence that the pattern of cancer incidence and survival for indigenous

Australians is quite different to that of other Australians, with higher incidence of some cancers, lower incidence of others, and lower cancer survival. Since indigenous people comprise 29% of the NT population, these differences are reflected in NT cancer incidence and mortality statistics.

Use of the data

Because of the small number of cases registered each year, the registry produces statistical reports only every few years.



Source of population

The official Australian Estimated Resident Population figures for 30 June each year are produced by the Australian Bureau of Statistics, based on the 1996 census with adjustment for under-enumeration, births, deaths and migration.

Notes on the data

† C44 not available.

AUSTRALIA, NORTHERN TERRITORY (1993-1997)

SITE	MALE						FEMALE						ICD-10
	No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates 0-64 (percent)	Cum. rates 0-74 (percent)	No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates 0-64 (percent)	Cum. rates 0-74 (percent)	
Lip	18	1.8	3.8	4.5	0.52	0.52	4	0.5	0.9	1.4	0.03	0.18	C00
Tongue	10	1.0	2.1	2.8	0.20	0.27	4	0.5	0.9	1.4	0.08	0.17	C01-02
Mouth	17	1.7	3.6	3.6	0.35	0.35	4	0.5	0.9	1.3	0.09	0.09	C03-06
Salivary glands	5	0.5	1.1	1.9	0.03	0.24	1	0.1	0.2	0.5	0.07	0.07	C07-08
Tonsil	14	1.4	3.0	4.4	0.39	0.46	3	0.4	0.7	0.6	0.05	0.05	C09
Other oropharynx	4	0.4	0.9	1.1	0.07	0.14	2	0.3	0.5	0.9	0.11	0.11	C10
Nasopharynx	4	0.4	0.9	0.8	0.08	0.08	1	0.1	0.2	0.6	0.00	0.10	C11
Hypopharynx	13	1.3	2.8	4.4	0.35	0.63	0	0.0	0.0	0.0	0.00	0.00	C12-13
Pharynx unspecified	1	0.1	0.2	0.6	0.00	0.00	0	0.0	0.0	0.0	0.00	0.00	C14
Oesophagus	15	1.5	3.2	5.8	0.33	0.96	5	0.6	1.2	1.9	0.08	0.32	C15
Stomach	22	2.2	4.7	8.1	0.36	0.65	7	0.9	1.7	3.2	0.19	0.47	C16
Small intestine	2	0.2	0.4	1.0	0.00	0.07	1	0.1	0.2	0.6	0.00	0.10	C17
Colon	65	6.6	13.9	22.2	1.03	2.94	52	6.7	12.3	21.2	0.89	2.27	C18
Rectum	46	4.7	9.8	16.8	0.70	2.12	17	2.2	4.0	6.4	0.33	0.61	C19-20
‡Anus	3	0.3	0.6	0.8	0.02	0.10	4	0.5	0.9	1.1	0.04	0.18	C21
Liver	26	2.7	5.6	8.6	0.51	1.14	4	0.5	0.9	1.9	0.03	0.27	C22
Gallbladder etc.	4	0.4	0.9	1.8	0.09	0.22	7	0.9	1.7	2.7	0.22	0.22	C23-24
Pancreas	19	1.9	4.1	5.9	0.57	0.78	15	1.9	3.5	6.6	0.29	0.85	C25
Nose, sinuses etc.	1	0.1	0.2	0.6	0.00	0.00	1	0.1	0.2	0.5	0.07	0.07	C30-31
Larynx	26	2.7	5.6	9.8	0.54	1.58	3	0.4	0.7	1.2	0.07	0.21	C32
Trachea, bronchus and lung	178	18.2	38.0	66.4	3.43	8.47	73	9.4	17.3	29.8	1.68	3.81	C33-34
Other thoracic organs	1	0.1	0.2	0.2	0.01	0.01	1	0.1	0.2	0.2	0.02	0.02	C37-38
Bone	5	0.5	1.1	1.1	0.07	0.07	2	0.3	0.5	0.3	0.02	0.02	C40-41
Melanoma of skin	97	9.9	20.7	22.8	1.72	2.28	79	10.2	18.7	18.6	1.62	1.72	C43
†Other skin													C44
Mesothelioma	10	1.0	2.1	3.8	0.27	0.54	0	0.0	0.0	0.0	0.00	0.00	C45
Kaposi sarcoma	2	0.2	0.4	0.3	0.02	0.02	0	0.0	0.0	0.0	0.00	0.00	C46
Connective and soft tissue	11	1.1	2.4	2.2	0.17	0.17	2	0.3	0.5	0.4	0.03	0.03	C47+C49
Breast	2	0.2	0.4	0.5	0.05	0.05	207	26.6	49.0	59.3	4.85	6.51	C50
Vulva							14	1.8	3.3	4.9	0.33	0.76	C51
Vagina							2	0.3	0.5	0.6	0.02	0.02	C52
Cervix uteri							57	7.3	13.5	16.3	1.06	1.87	C53
Corpus uteri							30	3.9	7.1	11.5	0.90	1.33	C54
Uterus unspecified							0	0.0	0.0	0.0	0.00	0.00	C55
Ovary							23	3.0	5.4	7.2	0.57	0.81	C56
Other female genital organs							1	0.1	0.2	0.4	0.05	0.05	C57
Placenta							1	0.1	0.2	0.3	0.02	0.02	C58
Penis	3	0.3	0.6	1.2	0.02	0.23							C60
Prostate	133	13.6	28.4	58.4	1.48	8.56							C61
Testis	22	2.2	4.7	4.0	0.29	0.29							C62
Other male genital organs	0	0.0	0.0	0.0	0.00	0.00							C63
Kidney	28	2.9	6.0	8.9	0.48	1.06	11	1.4	2.6	4.3	0.15	0.44	C64
Renal pelvis	1	0.1	0.2	0.3	0.03	0.03	0	0.0	0.0	0.0	0.00	0.00	C65
Ureter	2	0.2	0.4	0.6	0.01	0.09	1	0.1	0.2	0.6	0.00	0.14	C66
Bladder	23	2.3	4.9	9.1	0.37	1.47	8	1.0	1.9	3.3	0.19	0.43	C67
Other urinary organs	0	0.0	0.0	0.0	0.00	0.00	0	0.0	0.0	0.0	0.00	0.00	C68
Eye	6	0.6	1.3	1.5	0.12	0.12	2	0.3	0.5	0.4	0.03	0.03	C69
Brain, nervous system	18	1.8	3.8	4.0	0.23	0.37	13	1.7	3.1	3.9	0.26	0.45	C70-72
Thyroid	6	0.6	1.3	1.3	0.06	0.20	23	3.0	5.4	6.4	0.53	0.67	C73
Adrenal gland	1	0.1	0.2	0.4	0.05	0.05	1	0.1	0.2	0.2	0.02	0.02	C74
Other endocrine	0	0.0	0.0	0.0	0.00	0.00	0	0.0	0.0	0.0	0.00	0.00	C75
Hodgkin disease	4	0.4	0.9	0.8	0.09	0.09	3	0.4	0.7	0.6	0.04	0.04	C81
Non-Hodgkin lymphoma	32	3.3	6.8	9.1	0.51	1.08	21	2.7	5.0	6.6	0.28	0.71	C82-85,C96
Immunoproliferative diseases	0	0.0	0.0	0.0	0.00	0.00	0	0.0	0.0	0.0	0.00	0.00	C88
Multiple myeloma	5	0.5	1.1	2.1	0.07	0.28	6	0.8	1.4	2.4	0.10	0.19	C90
Lymphoid leukaemia	6	0.6	1.3	1.6	0.06	0.14	6	0.8	1.4	2.2	0.10	0.20	C91
Myeloid leukaemia	13	1.3	2.8	3.7	0.25	0.52	16	2.1	3.8	5.7	0.25	0.63	C92-94
Leukaemia unspecified	0	0.0	0.0	0.0	0.00	0.00	0	0.0	0.0	0.0	0.00	0.00	C95
Other and unspecified	56	5.7	12.0	20.5	0.71	2.98	40	5.1	9.5	15.5	0.90	1.95	O&U
All sites													ALL
All sites but C44	980	100.0	209.5	330.2	16.71	42.41	778	100.0	184.1	255.8	16.66	29.17	ALLbC44

‡33.3% of cases are anorectal tumours

†See note following population pyramid

Australia, Queensland

Registration area

The Queensland Cancer Registry collects data relevant to the State of Queensland, which occupies the northeastern portion of the Australian continent. Queensland is the second largest of the six Australian States and has the largest habitable area. Known as the 'Sunshine State', Queensland boasts a subtropical to tropical climate.

The Queensland population of 3 319 229 (1996) is 18% of the total population of Australia. Queensland's population is the least centralized of all the mainland States of Australia. The majority of the population lives in coastal areas, with approximately 60% living in towns or cities with populations of 40 000 or more. Brisbane is the capital of Queensland.

Immigrants from overseas now make up almost 20% of the Queensland population. Aboriginal and Torres Strait Islander people represent approximately 2.9% of the total population. Over three-quarters of the population are of Christian denomination.

Cancer care facilities

Specialist cancer treatment is primarily provided by the major Brisbane hospitals (Princess Alexandra Hospital, Mater Misericordiae Hospital, Royal Brisbane Hospital and the Greenslopes and Wesley Private Hospitals) with large regional hospitals (e.g., Townsville and Rockhampton) also providing specialized treatment. In addition, some oncology specialists visit patients at regional centres. Radium treatment is available at Townsville and Brisbane.

Registry structure and methods

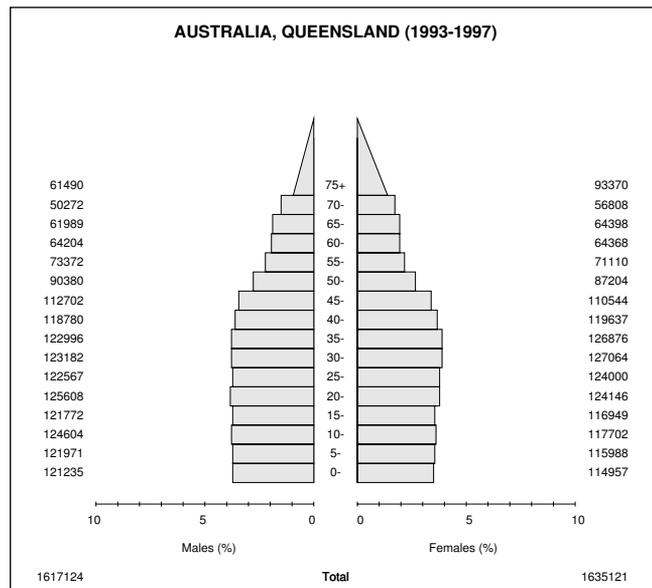
The registry is located at the Queensland Cancer Fund and is funded and managed by the Queensland Department of Health. The registry has a core of eight staff as well as a number of temporary staff to undertake supplementary projects.

Data collection for the Queensland Cancer Registry commenced on 1 January 1982. The registry operates under an Act of Parliament that requires compulsory notification of all cancer patients in Queensland to the registry from all hospitals (public, private, psychiatric) and nursing homes. In addition, it is compulsory for all pathology laboratories to provide pathology reports mentioning cancer to the registry. Death certificates are accessed where the cause of death is cancer and also for cancer patients dying of causes other than cancer.

Arrangements for completion of forms vary according to the type of hospital. Resident medical staff and medical records staff are involved in the larger hospitals, medical superintendents and nursing staff at smaller hospitals.

Interpreting the results

A number of new initiatives have been undertaken in recent years. Quality assurance reviews have been conducted on cause of death coding from the Australian Bureau of Statistics. A review comparing cancer notifications against the hospital morbidity collection is being conducted and indicates some under-reporting, particularly for patients admitted with a history of cancer. A more active survival follow-up for specific cancer sites has been undertaken. Additionally, the registry has been able to obtain access to electronic pathology reports for all public hospitals. Access to the electoral roll with date of birth has been gained, which assists in identifying patients still alive, and the registrar of births, deaths and marriages has introduced date of birth and indigenous identifier to the death certificate.



Source of population

1986 to 1996 Census Population by Indigenous Status, Sex and Age Group, Queensland. Source: CDATA96, ABS 1986 to 1996 Census of Population and Housing (final release).

Notes on the data

† C44 does not include basal cell or squamous cell carcinoma.

AUSTRALIA, QUEENSLAND (1993-1997)

SITE	MALE						FEMALE						ICD-10
	No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates (percent)		No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates (percent)		
Lip	1112	2.8	13.8	10.9	0.74	1.18	326	1.0	4.0	2.5	0.14	0.26	C00
Tongue	283	0.7	3.5	2.9	0.22	0.36	154	0.5	1.9	1.4	0.09	0.16	C01-02
Mouth	264	0.7	3.3	2.6	0.19	0.32	153	0.5	1.9	1.3	0.09	0.16	C03-06
Salivary glands	137	0.3	1.7	1.3	0.07	0.13	79	0.3	1.0	0.7	0.04	0.07	C07-08
Tonsil	138	0.3	1.7	1.4	0.10	0.17	31	0.1	0.4	0.3	0.02	0.04	C09
Other oropharynx	63	0.2	0.8	0.7	0.05	0.09	18	0.1	0.2	0.1	0.01	0.02	C10
Nasopharynx	58	0.1	0.7	0.6	0.04	0.06	27	0.1	0.3	0.3	0.02	0.03	C11
Hypopharynx	154	0.4	1.9	1.6	0.11	0.20	28	0.1	0.3	0.2	0.01	0.03	C12-13
Pharynx unspecified	55	0.1	0.7	0.5	0.02	0.07	7	0.0	0.1	0.1	0.01	0.01	C14
Oesophagus	569	1.4	7.0	5.3	0.29	0.64	283	0.9	3.5	2.1	0.09	0.24	C15
Stomach	1002	2.5	12.4	8.8	0.39	1.00	558	1.8	6.8	3.9	0.16	0.40	C16
Small intestine	99	0.2	1.2	0.9	0.05	0.11	77	0.2	0.9	0.7	0.04	0.08	C17
Colon	3261	8.1	40.3	29.8	1.61	3.56	3127	10.0	38.2	24.1	1.25	2.89	C18
Rectum	1963	4.9	24.3	18.5	1.10	2.28	1162	3.7	14.2	9.5	0.58	1.12	C19-20
Anus	94	0.2	1.2	0.9	0.06	0.10	92	0.3	1.1	0.8	0.04	0.10	C21
Liver	303	0.8	3.7	2.8	0.15	0.36	115	0.4	1.4	0.9	0.04	0.10	C22
Gallbladder etc.	195	0.5	2.4	1.8	0.09	0.21	296	0.9	3.6	2.2	0.11	0.25	C23-24
Pancreas	709	1.8	8.8	6.4	0.31	0.77	610	2.0	7.5	4.4	0.19	0.48	C25
Nose, sinuses etc.	82	0.2	1.0	0.8	0.04	0.09	36	0.1	0.4	0.3	0.02	0.04	C30-31
Larynx	471	1.2	5.8	4.6	0.29	0.61	51	0.2	0.6	0.5	0.03	0.06	C32
Trachea, bronchus and lung	4820	12.0	59.6	43.6	2.11	5.60	1885	6.0	23.1	15.7	0.93	1.97	C33-34
Other thoracic organs	64	0.2	0.8	0.7	0.04	0.07	29	0.1	0.4	0.2	0.01	0.03	C37-38
Bone	108	0.3	1.3	1.2	0.07	0.11	68	0.2	0.8	0.7	0.05	0.07	C40-41
Melanoma of skin	5156	12.8	63.8	51.1	3.42	5.39	3907	12.5	47.8	38.1	2.78	3.75	C43
†Other skin	171		2.1	1.5	0.07	0.15	87		1.1	0.7	0.04	0.07	C44
Mesothelioma	287	0.7	3.5	2.7	0.16	0.34	35	0.1	0.4	0.3	0.03	0.04	C45
Kaposi sarcoma	53	0.1	0.7	0.6	0.04	0.05	5	0.0	0.1	0.1	0.00	0.01	C46
Connective and soft tissue	327	0.8	4.0	3.2	0.19	0.31	252	0.8	3.1	2.3	0.14	0.22	C47+C49
Breast	66	0.2	0.8	0.6	0.03	0.07	8152	26.1	99.7	75.5	5.65	8.42	C50
Vulva							186	0.6	2.3	1.4	0.07	0.14	C51
Vagina							63	0.2	0.8	0.6	0.03	0.07	C52
Cervix uteri							941	3.0	11.5	9.1	0.68	0.90	C53
Corpus uteri							1175	3.8	14.4	10.3	0.72	1.25	C54
Uterus unspecified							0	0.0	0.0	0.0	0.00	0.00	C55
Ovary							966	3.1	11.8	8.8	0.61	0.98	C56
Other female genital organs							18	0.1	0.2	0.2	0.01	0.02	C57
Placenta							6	0.0	0.1	0.1	0.00	0.00	C58
Penis	59	0.1	0.7	0.6	0.04	0.07							C60
Prostate	8926	22.1	110.4	75.9	2.49	9.42							C61
Testis	482	1.2	6.0	5.4	0.39	0.42							C62
Other male genital organs	15	0.0	0.2	0.1	0.01	0.01							C63
Kidney	966	2.4	11.9	9.3	0.56	1.08	542	1.7	6.6	4.7	0.27	0.55	C64
Renal pelvis	88	0.2	1.1	0.8	0.04	0.11	132	0.4	1.6	1.0	0.04	0.14	C65
Ureter	61	0.2	0.8	0.5	0.02	0.07	52	0.2	0.6	0.4	0.01	0.05	C66
Bladder	2157	5.3	26.7	19.2	0.87	2.30	746	2.4	9.1	5.7	0.28	0.66	C67
Other urinary organs	33	0.1	0.4	0.3	0.01	0.03	18	0.1	0.2	0.1	0.01	0.01	C68
Eye	157	0.4	1.9	1.5	0.08	0.16	94	0.3	1.1	0.9	0.05	0.09	C69
Brain, nervous system	673	1.7	8.3	7.3	0.45	0.71	473	1.5	5.8	4.9	0.31	0.46	C70-72
Thyroid	182	0.5	2.3	1.9	0.14	0.19	563	1.8	6.9	5.8	0.45	0.54	C73
Adrenal gland	24	0.1	0.3	0.4	0.02	0.02	31	0.1	0.4	0.4	0.03	0.03	C74
Other endocrine	25	0.1	0.3	0.3	0.02	0.02	17	0.1	0.2	0.2	0.01	0.02	C75
Hodgkin disease	164	0.4	2.0	1.9	0.12	0.15	138	0.4	1.7	1.6	0.11	0.13	C81
Non-Hodgkin lymphoma	1318	3.3	16.3	12.9	0.79	1.40	1072	3.4	13.1	8.9	0.51	0.99	C82-85,C96
Immunoproliferative diseases	3	0.0	0.0	0.0	0.00	0.00	0	0.0	0.0	0.0	0.00	0.00	C88
Multiple myeloma	390	1.0	4.8	3.4	0.16	0.39	301	1.0	3.7	2.3	0.12	0.25	C90
Lymphoid leukaemia	577	1.4	7.1	6.2	0.34	0.60	415	1.3	5.1	4.1	0.21	0.37	C91
Myeloid leukaemia	605	1.5	7.5	5.7	0.30	0.61	454	1.5	5.6	3.9	0.22	0.38	C92-94
Leukaemia unspecified	45	0.1	0.6	0.4	0.01	0.03	35	0.1	0.4	0.2	0.01	0.03	C95
Other and unspecified	1484	3.7	18.4	13.2	0.63	1.49	1223	3.9	15.0	8.9	0.42	0.96	O&U
All sites	40498		500.9	375.3	19.55	43.68	31311		383.0	274.3	17.79	30.12	ALL
All sites but C44	40327	100.0	498.7	373.7	19.48	43.53	31224	100.0	381.9	273.6	17.75	30.05	ALLbC44

†See note following population pyramid

South Australia

Registration area

South Australia is a state in the Australian federation of six states and two territories. It is situated between 26° and 38° S and 129° and 141° E and covers a total area of 984 375 km². Over one-third of this area is desert and over one-half of the state is devoted to extensive pastoral pursuits.

Approximately 99% of the population lives south of the 32nd parallel and a high proportion of the population lives in or around the coastal state capital city, Adelaide.

Registry structure and methods

The South Australian Cancer Registry started in 1976, on a voluntary basis, but since 1977 notification of cancer has been a statutory obligation (without penalty) for all hospitals and pathology laboratories in South Australia. Hospitals are required to report all cases of cancer (except non-melanotic skin cancers) within one calendar month of: the patient's commencing radiotherapy, the patient's discharge from the hospital and/or death of the patient in the hospital. Pathology laboratories are required to send copies of reports of all cases of cancer within one calendar month of the finalization of the pathology report.

The system of notification varies among hospitals depending on hospital size, staffing and types of record systems. In general, the responsibility lies with medical records officers in public hospitals and managers in private institutions. The multiple notifications received are linked and a file is created for each patient.

Checks are available to the registry from death certifications and pathology reports. Cases from such sources that are not reported by hospitals are followed up.

Information collected includes country of birth, race, occupation, Breslow thickness and Clark level for melanoma and tumour diameter and nodal status for cancer of the breast.

The registry staff regularly telephone, visit or write to all hospitals to obtain information on inadequately reported cases and cases not reported but identified from pathology laboratory reports. Patients' medical advisers may be consulted by letter or telephone if case discrepancies are not resolved by other means. An annual cross-linkage checks cancer registry live cases with the Registrar of Deaths' main deaths file to see whether any cancer cases have died of a condition other than cancer. Cancer deaths are detected on a monthly basis by electronically searching the current file of death certificates obtained from the Registrar of Births, Deaths and Marriages. Hospitals and/or treating medical advisers are consulted where a cancer death certificate is received for someone not already known to the registry. All Australian registries communicate regularly with each other about cases who have moved interstate.

Ascertainment checks to find unreported cases are performed at least every six months by comparing hospitals' inpatient separation data with the registry's files. An annual data validation check is performed in addition to the routine editing and validation procedures incorporated into the data entry software.

Since 1987, a system of hospital-based (clinical) registries has been established in major teaching hospitals in South Australia. Special liaisons have been established with the hospitals' departments to facilitate the follow-up of patients by clinicians and to enable them to evaluate clinical aspects such as treatment outcomes in relation to disease stage and important prognostic factors. The relevant clinical areas own these hospital-based registries, but significant interaction with the population-based registry is required for case ascertainment and data provision.

Use of the data

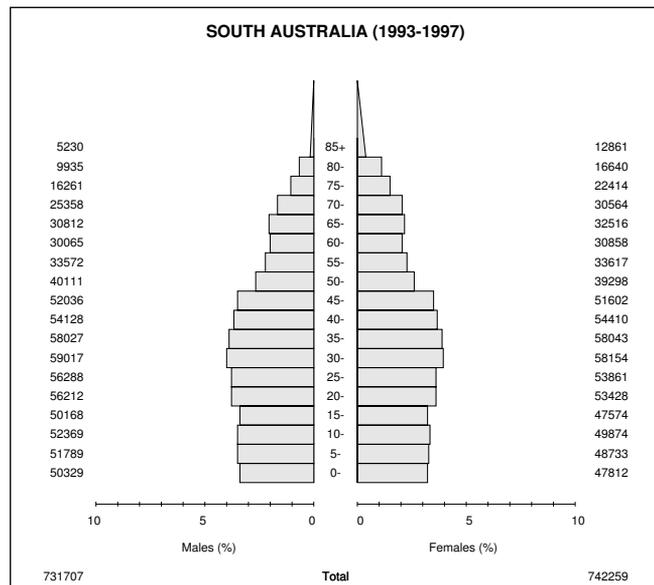
The primary objective of the registry is to describe the nature and extent of cancer in South Australia, to monitor cancer incidence, mortality and survival, and to evaluate spatial and sub-population differences. Registry publications on cancer in South Australia are current and timely and have been well received locally, interstate and overseas.

The data are used extensively for monitoring of the burden of cancer in the community and for evaluation of the effectiveness of cancer control and prevention programmes, for example breast and cervical cancer screening, and of clinical services. Other international, national and local bodies also use the data extensively for their cancer prevention, cancer control, clinical services and/or research activities. The Anti-Cancer Foundation of South Australia is one example of a local organization which uses cancer registry data heavily in its activities.

An analysis of survival has provided valuable information for the entire South Australian community, and this has served as a standard comparison for intra-hospital survival studies. The data are now sufficient for ten-year relative survival rates to be calculated. The rates are based on the proportion of survivors from 1977 in the patient group, as related to the proportion of survivors in a similar group of people without the disease.

Cancer registry data also are used in the investigation of perceived cancer clusters in various geographical areas. These perceptions usually arise from a citizen, or group of citizens who are concerned about their local environment.

Other cancer epidemiology and statistics endeavours are supported, such as the National Malignant Mesothelioma Project, National Paediatric Cancer Registry, the National Cancer Statistics Clearing House and various *ad hoc* international, national and local projects.



Source of population

The mid-year 1995 population was estimated by the Australian Bureau of Statistics, based on the 1991 census, and advancing age and allowing for migration, births and deaths.

Notes on the data

† C44 does not include basal cell or squamous cell carcinoma except for skin of lip and anus.

SOUTH AUSTRALIA (1993-1997)

SITE	MALE						FEMALE						ICD-10
	No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates (percent)		No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates (percent)		
Lip	439	2.2	12.0	8.8	0.56	0.96	160	1.0	4.3	2.5	0.14	0.27	C00
Tongue	85	0.4	2.3	1.7	0.11	0.22	41	0.3	1.1	0.7	0.04	0.08	C01-02
Mouth	92	0.5	2.5	1.9	0.14	0.24	60	0.4	1.6	1.0	0.06	0.12	C03-06
Salivary glands	62	0.3	1.7	1.2	0.05	0.11	33	0.2	0.9	0.5	0.04	0.06	C07-08
Tonsil	40	0.2	1.1	0.9	0.07	0.11	19	0.1	0.5	0.3	0.02	0.04	C09
Other oropharynx	17	0.1	0.5	0.4	0.02	0.04	3	0.0	0.1	0.0	0.00	0.00	C10
Nasopharynx	28	0.1	0.8	0.6	0.04	0.06	8	0.1	0.2	0.2	0.01	0.02	C11
Hypopharynx	33	0.2	0.9	0.7	0.04	0.09	2	0.0	0.1	0.1	0.01	0.01	C12-13
Pharynx unspecified	16	0.1	0.4	0.3	0.02	0.04	4	0.0	0.1	0.1	0.00	0.01	C14
Oesophagus	266	1.3	7.3	4.8	0.22	0.56	142	0.9	3.8	1.8	0.05	0.21	C15
Stomach	524	2.6	14.3	9.2	0.38	1.03	303	1.9	8.2	4.3	0.21	0.50	C16
Small intestine	43	0.2	1.2	0.8	0.05	0.10	25	0.2	0.7	0.4	0.03	0.06	C17
Colon	1523	7.6	41.6	27.8	1.36	3.30	1565	10.0	42.2	22.6	1.12	2.57	C18
Rectum	1053	5.3	28.8	20.3	1.13	2.55	744	4.8	20.0	11.7	0.68	1.38	C19-20
‡Anus	16	0.1	0.4	0.3	0.02	0.04	34	0.2	0.9	0.5	0.02	0.05	C21
Liver	130	0.7	3.6	2.4	0.11	0.31	57	0.4	1.5	0.9	0.04	0.11	C22
Gallbladder etc.	136	0.7	3.7	2.4	0.10	0.27	178	1.1	4.8	2.3	0.10	0.25	C23-24
Pancreas	370	1.9	10.1	6.7	0.30	0.79	372	2.4	10.0	4.6	0.14	0.52	C25
Nose, sinuses etc.	26	0.1	0.7	0.5	0.02	0.07	16	0.1	0.4	0.2	0.01	0.02	C30-31
Larynx	191	1.0	5.2	3.7	0.20	0.52	20	0.1	0.5	0.4	0.03	0.05	C32
Trachea, bronchus and lung	2346	11.7	64.1	42.3	1.85	5.43	1016	6.5	27.4	16.0	0.82	1.99	C33-34
Other thoracic organs	9	0.0	0.2	0.2	0.02	0.02	9	0.1	0.2	0.2	0.01	0.02	C37-38
Bone	42	0.2	1.1	1.0	0.05	0.09	27	0.2	0.7	0.7	0.05	0.06	C40-41
Melanoma of skin	1530	7.7	41.8	31.5	2.06	3.32	1460	9.4	39.3	28.9	2.01	2.97	C43
†Other skin	214		5.8	4.1	0.24	0.46	122		3.3	1.9	0.10	0.21	C44
Mesothelioma	139	0.7	3.8	2.6	0.14	0.35	25	0.2	0.7	0.5	0.03	0.06	C45
Kaposi sarcoma	26	0.1	0.7	0.5	0.04	0.05	3	0.0	0.1	0.1	0.00	0.01	C46
Connective and soft tissue	134	0.7	3.7	2.9	0.17	0.27	111	0.7	3.0	1.9	0.09	0.19	C47+C49
Breast	32	0.2	0.9	0.6	0.02	0.05	4244	27.2	114.4	80.8	6.09	9.09	C50
Vulva							96	0.6	2.6	1.4	0.07	0.14	C51
Vagina							21	0.1	0.6	0.3	0.02	0.03	C52
Cervix uteri							303	1.9	8.2	6.1	0.45	0.61	C53
Corpus uteri							666	4.3	17.9	11.7	0.80	1.40	C54
Uterus unspecified							0	0.0	0.0	0.0	0.00	0.00	C55
Ovary							430	2.8	11.6	7.8	0.59	0.87	C56
Other female genital organs							16	0.1	0.4	0.3	0.03	0.03	C57
Placenta							3	0.0	0.1	0.1	0.01	0.01	C58
Penis	16	0.1	0.4	0.3	0.02	0.03							C60
Prostate	5737	28.7	156.8	98.5	3.29	12.27							C61
Testis	228	1.1	6.2	5.5	0.41	0.43							C62
Other male genital organs	6	0.0	0.2	0.1	0.00	0.01							C63
Kidney	459	2.3	12.5	9.2	0.54	1.06	255	1.6	6.9	4.5	0.28	0.53	C64
Renal pelvis	35	0.2	1.0	0.6	0.02	0.08	42	0.3	1.1	0.6	0.03	0.08	C65
Ureter	26	0.1	0.7	0.5	0.02	0.06	14	0.1	0.4	0.2	0.01	0.03	C66
Bladder	1271	6.4	34.7	23.1	1.04	2.68	443	2.8	11.9	6.2	0.27	0.77	C67
Other urinary organs	4	0.0	0.1	0.1	0.00	0.01	4	0.0	0.1	0.1	0.00	0.01	C68
Eye	61	0.3	1.7	1.1	0.06	0.14	26	0.2	0.7	0.5	0.03	0.04	C69
Brain, nervous system	312	1.6	8.5	7.0	0.48	0.73	236	1.5	6.4	5.2	0.33	0.52	C70-72
Thyroid	84	0.4	2.3	1.8	0.13	0.17	227	1.5	6.1	5.0	0.40	0.46	C73
Adrenal gland	15	0.1	0.4	0.5	0.03	0.03	11	0.1	0.3	0.3	0.02	0.02	C74
Other endocrine	3	0.0	0.1	0.1	0.00	0.00	1	0.0	0.0	0.0	0.00	0.00	C75
Hodgkin disease	92	0.5	2.5	2.3	0.16	0.19	72	0.5	1.9	1.7	0.10	0.14	C81
Non-Hodgkin lymphoma	703	3.5	19.2	14.2	0.85	1.51	664	4.3	17.9	11.4	0.71	1.29	C82-85,C96
Immunoproliferative diseases	20	0.1	0.5	0.3	0.01	0.04	18	0.1	0.5	0.3	0.02	0.04	C88
Multiple myeloma	210	1.1	5.7	4.0	0.22	0.46	221	1.4	6.0	3.2	0.14	0.39	C90
Lymphoid leukaemia	341	1.7	9.3	7.3	0.39	0.74	229	1.5	6.2	4.4	0.23	0.43	C91
Myeloid leukaemia	283	1.4	7.7	5.2	0.24	0.52	215	1.4	5.8	3.7	0.24	0.35	C92-94
Leukaemia unspecified	7	0.0	0.2	0.1	0.00	0.01	7	0.0	0.2	0.1	0.00	0.00	C95
Other and unspecified	720	3.6	19.7	13.0	0.56	1.46	708	4.5	19.1	9.5	0.40	1.00	O&U
All sites	20195		552.0	375.8	18.00	44.12	15731		423.9	270.4	17.13	30.11	ALL
All sites but C44	19981	100.0	546.1	371.6	17.76	43.65	15609	100.0	420.6	268.6	17.03	29.89	ALLbC44

‡68.8% of cases are anorectal tumours

‡38.2% of cases are anorectal tumours

†See note following population pyramid

Australia, Tasmania

Registration area

Tasmania, the smallest state of Australia, is a group of islands of 68 114 km², about 0.9% of the total area of Australia, which lies between 40° and 43°, and has a temperate climate. The principal industries are aquaculture, viticulture, mining and forestry. Secondary industries include textile, confectionery, beer and beverages, zinc and aluminium smelters, and vegetable and milk processing. Tourism is also a major industry in Tasmania. Water-power stations provide nearly all the electricity generated in the state. Wood fires used for home heating produce smoke in populated areas during the winter. A degree of heavy metal pollution of river waters occurs in some areas.

Only 2.5% of Australia's population resides in Tasmania. Tasmania is the most decentralized state in Australia, with almost 60% of people living outside the capital city statistical division. Like the national population, that of Tasmania is ageing, with an increasing proportion of the population aged 65 years and over. Tasmania is the least diverse population in multicultural terms of all the states in Australia, with 95.5% of the population born in Australia, the USA, the United Kingdom, New Zealand and South Africa. 3% of the population are of indigenous origin.

Cancer care facilities

Tasmania is well served by oncology services. The three main population regions all have a public hospital system as well as a number of private hospitals. There are two radiation oncology units in the state.

Registry structure and methods

The Tasmanian Cancer Registry was established in 1977, as a population-based registry covering the state. The registry was set up for the purpose of providing the State Government with accurate cancer incidence and mortality statistics and to provide the capacity to monitor cancer trends. In July 1988 the responsibility for the operation of the cancer registry was transferred from the Department of Health Services to the Menzies Centre for Population Health Research, University of Tasmania in Hobart.

Cancers were proclaimed as notifiable diseases in December 1992 and since then cancer registration has had a legislative basis. The registry is assisted by an Advisory Committee and a Data Release Committee. The registry staff currently comprises a Director, Registrar, two Administrative Assistants and a Clerical Assistant.

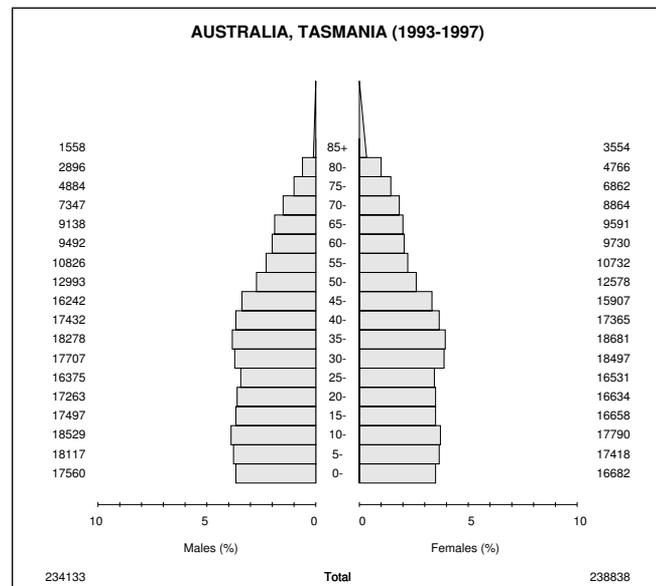
All the pathology laboratories in the state send the registry copies of histopathology, cytology and cell marker reports of cancer. Notification of cancer forms are supplied by the two radiation oncology clinics. Private and public hospitals notify diagnoses of cancer to the registry upon discharge of patients or provide a computerized listing of cancer cases periodically. Death certificates of Tasmania people are reviewed for mention of cancer as a cause of death. Since 1994, breast and cervix cancer screening programmes have been undertaken in Tasmania and listings from these sources are available to check against registry records. Interstate registries supply data to the Tasmanian Cancer Registry on Tasmania residents who seek treatment interstate or who move interstate at some time after cancer diagnosis. The registry still collects all pathology reports of non-melanoma skin cancers but does not routinely enter the data.

To help achieve high data quality and case ascertainment, data are obtained from multiple sources such as pathology laboratories, hospitals and the Registrar 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 laboratories and hospital medical records departments. In addition, the National Cancer Statistics Clearing House (NCSCCH) in the national capital, Canberra, collates all State and Territory data and checks for duplicate registrations across two or more states.

Cases are not accepted at the registry on the basis of a death certificate only. Each death certificate is actively followed up until the time and place of diagnosis is ascertained and the diagnosis verified.

Use of the data

The registry publishes a report each year showing the number of new cases of cancer in Tasmania and each cancer registry in Australia sends information to the NCSCCH, which publishes a national report. More detailed information is made available to the State Government health care institutions, health-care professionals and health researchers to plan cancer education, treatment and research. In ethically approved research projects, identified data from the cancer registry may be released to researchers.



Source of population

1991 and 1996 are census populations, adjusted for under-enumeration and Australian residents temporarily overseas. The intercensal estimates are obtained from the previous census by advancing age and allowing for births, deaths and migration. They are adjusted in the light of the succeeding census.

Ref. Australian Demographic Statistics, Australian Bureau of Statistics, Cat. No. 3101.0, Dec. 1996-2001. Allen DN, Tasmanian Year Book 1996, Australian Bureau of Statistics, Cat. No. 3101.6, 1996.

Notes on the data

† C44 not available.

AUSTRALIA, TASMANIA (1993-1997)

SITE	MALE						FEMALE						ICD-10
	No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates		No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates		
					0-64	0-74					0-64	0-74	
Lip	164	2.7	14.0	10.4	0.61	1.21	51	1.1	4.3	2.6	0.14	0.29	C00
Tongue	25	0.4	2.1	1.6	0.06	0.21	12	0.3	1.0	0.6	0.02	0.08	C01-02
Mouth	31	0.5	2.6	2.0	0.11	0.31	21	0.4	1.8	1.4	0.09	0.14	C03-06
Salivary glands	13	0.2	1.1	0.8	0.05	0.08	8	0.2	0.7	0.6	0.05	0.05	C07-08
Tonsil	14	0.2	1.2	0.9	0.05	0.14	1	0.0	0.1	0.1	0.01	0.01	C09
Other oropharynx	3	0.0	0.3	0.2	0.02	0.02	2	0.0	0.2	0.1	0.00	0.02	C10
Nasopharynx	8	0.1	0.7	0.4	0.01	0.05	1	0.0	0.1	0.1	0.01	0.01	C11
Hypopharynx	22	0.4	1.9	1.5	0.09	0.18	5	0.1	0.4	0.3	0.01	0.04	C12-13
Pharynx unspecified	4	0.1	0.3	0.3	0.02	0.03	3	0.1	0.3	0.2	0.00	0.02	C14
Oesophagus	115	1.9	9.8	6.9	0.30	0.87	68	1.4	5.7	3.1	0.16	0.34	C15
Stomach	180	2.9	15.4	10.7	0.46	1.27	103	2.2	8.6	4.8	0.24	0.61	C16
Small intestine	12	0.2	1.0	0.8	0.04	0.09	15	0.3	1.3	1.0	0.08	0.11	C17
Colon	479	7.8	40.9	30.0	1.60	3.74	507	10.6	42.5	25.8	1.38	3.09	C18
Rectum	291	4.7	24.9	17.8	0.89	2.20	199	4.2	16.7	10.3	0.63	1.22	C19-20
‡Anus	7	0.1	0.6	0.4	0.02	0.06	12	0.3	1.0	0.6	0.02	0.08	C21
Liver	38	0.6	3.2	2.3	0.10	0.27	17	0.4	1.4	1.1	0.07	0.13	C22
Gallbladder etc.	37	0.6	3.2	2.0	0.06	0.23	44	0.9	3.7	2.1	0.09	0.27	C23-24
Pancreas	114	1.9	9.7	6.9	0.35	0.78	121	2.5	10.1	5.7	0.24	0.69	C25
Nose, sinuses etc.	18	0.3	1.5	1.2	0.09	0.15	4	0.1	0.3	0.3	0.03	0.04	C30-31
Larynx	56	0.9	4.8	3.6	0.24	0.49	15	0.3	1.3	0.8	0.04	0.11	C32
Trachea, bronchus and lung	787	12.8	67.2	48.1	2.42	6.02	343	7.2	28.7	19.7	1.25	2.54	C33-34
Other thoracic organs	4	0.1	0.3	0.2	0.01	0.01	6	0.1	0.5	0.3	0.01	0.03	C37-38
Bone	14	0.2	1.2	0.9	0.06	0.07	13	0.3	1.1	1.0	0.07	0.11	C40-41
Melanoma of skin	424	6.9	36.2	28.7	1.83	3.13	424	8.9	35.5	27.0	1.93	2.69	C43
†Other skin													C44
Mesothelioma	28	0.5	2.4	1.7	0.09	0.19	4	0.1	0.3	0.2	0.01	0.02	C45
Kaposi sarcoma	5	0.1	0.4	0.3	0.02	0.04	2	0.0	0.2	0.1	0.01	0.02	C46
Connective and soft tissue	31	0.5	2.6	2.2	0.13	0.23	24	0.5	2.0	1.4	0.09	0.14	C47+C49
Breast	13	0.2	1.1	0.8	0.05	0.11	1247	26.2	104.4	78.2	5.97	8.72	C50
Vulva							27	0.6	2.3	1.3	0.07	0.13	C51
Vagina							8	0.2	0.7	0.3	0.01	0.05	C52
Cervix uteri							139	2.9	11.6	9.1	0.69	0.93	C53
Corpus uteri							159	3.3	13.3	9.9	0.68	1.22	C54
Uterus unspecified							0	0.0	0.0	0.0	0.00	0.00	C55
Ovary							176	3.7	14.7	10.8	0.76	1.17	C56
Other female genital organs							6	0.1	0.5	0.2	0.00	0.03	C57
Placenta							0	0.0	0.0	0.0	0.00	0.00	C58
Penis	5	0.1	0.4	0.3	0.02	0.02							C60
Prostate	1789	29.2	152.8	103.3	3.58	13.12							C61
Testis	72	1.2	6.2	5.5	0.43	0.47							C62
Other male genital organs	1	0.0	0.1	0.0	0.00	0.00							C63
Kidney	143	2.3	12.2	9.5	0.59	1.07	78	1.6	6.5	4.4	0.27	0.50	C64
Renal pelvis	9	0.1	0.8	0.5	0.03	0.05	7	0.1	0.6	0.3	0.01	0.04	C65
Ureter	12	0.2	1.0	0.8	0.04	0.10	3	0.1	0.3	0.2	0.00	0.03	C66
Bladder	330	5.4	28.2	19.9	0.92	2.40	100	2.1	8.4	4.6	0.18	0.54	C67
Other urinary organs	1	0.0	0.1	0.1	0.01	0.01	4	0.1	0.3	0.2	0.01	0.02	C68
Eye	12	0.2	1.0	0.9	0.06	0.11	14	0.3	1.2	0.8	0.04	0.06	C69
Brain, nervous system	100	1.6	8.5	7.2	0.51	0.77	78	1.6	6.5	5.8	0.40	0.53	C70-72
Thyroid	26	0.4	2.2	1.9	0.18	0.21	88	1.8	7.4	6.0	0.50	0.58	C73
Adrenal gland	1	0.0	0.1	0.1	0.01	0.01	3	0.1	0.3	0.3	0.02	0.02	C74
Other endocrine	2	0.0	0.2	0.2	0.02	0.02	2	0.0	0.2	0.1	0.01	0.01	C75
Hodgkin disease	29	0.5	2.5	2.3	0.17	0.19	22	0.5	1.8	1.9	0.13	0.14	C81
Non-Hodgkin lymphoma	200	3.3	17.1	12.7	0.73	1.39	186	3.9	15.6	10.5	0.67	1.21	C82-85,C96
Immunoproliferative diseases	4	0.1	0.3	0.2	0.00	0.01	4	0.1	0.3	0.2	0.01	0.02	C88
Multiple myeloma	75	1.2	6.4	4.3	0.20	0.47	55	1.2	4.6	2.8	0.17	0.31	C90
Lymphoid leukaemia	57	0.9	4.9	3.9	0.15	0.39	62	1.3	5.2	3.7	0.15	0.39	C91
Myeloid leukaemia	78	1.3	6.7	4.9	0.23	0.48	54	1.1	4.5	3.3	0.20	0.32	C92-94
Leukaemia unspecified	3	0.0	0.3	0.1	0.00	0.01	2	0.0	0.2	0.1	0.00	0.01	C95
Other and unspecified	241	3.9	20.6	14.4	0.55	1.76	213	4.5	17.8	9.8	0.42	1.10	O&U
All sites													ALL
All sites but C44	6127	100.0	523.4	376.9	18.22	45.26	4762	100.0	398.8	276.1	18.04	30.97	ALLbC44

‡33.3% of cases are anorectal tumours

†See note following population pyramid

Australia, Victoria

Registration area

The Victorian Cancer Registry covers the State of Victoria, the second most populous state in the Australian Commonwealth. Victoria is situated in the southeastern corner of the island continent and is bounded to the north by New South Wales and to the west by South Australia. One in four Australians lives in Victoria, and almost three quarters of these live in the Melbourne Metropolitan Area, with most of the remaining people living in small provincial cities. The average density of population is 20 persons per km², ranging from less than two in the Wimmera to over 400 in the Melbourne Statistical Division.

At the 1996 census, 24% of the population was described as being overseas-born. Of these 24% were from southern Europe (9% from Italy, 6% from Greece, 7% from former Yugoslavia), 21% were from Great Britain, and 5% from Viet Nam. The remainder originated in other European countries and the ex-USSR, Malaysia, China, India, and small numbers from other countries in Asia, South America, Africa and Oceania.

Almost 70% of Victorians were Christians (28% Catholic), with less than one per cent each of Muslim, Jewish, Buddhist, Hindu and other non-Christian religious denominations and one-third of Victorians having no stated religion.

Cancer care facilities

Victoria's medical care system is a mix of private and public sectors. In 1996 it had a well established system of 122 public hospitals with several specialist oncology units including radiation oncology centres, and one large hospital dedicated to cancer treatment, together yielding a total of 12 134 public hospital beds. In addition, there were 127 private hospitals containing 6324 beds. Similarly, a mix of public hospital departments and private laboratories provided pathology services.

Registry structure and methods

The Victorian Cancer Registry was established in 1940 by the Anti-Cancer Council of Victoria. Since legislation was passed in December 1982, cancer notification has been compulsory for all hospitals and pathology laboratories in Victoria and in 1982, the first year of fully population-based coverage was achieved. The registry is now central to the Anti-Cancer Council's cancer control programme, and is housed in the new Cancer Control Research Institute in Melbourne. The registry also receives recurrent funding from the Department of Human Services, Victoria. The registry has its own staff of around 20, including medical coders and clerical staff, a consultant pathologist, registrar and deputy registrar, in addition to the director, information manager and administrative support of the Cancer Epidemiology Centre, of which it forms a part.

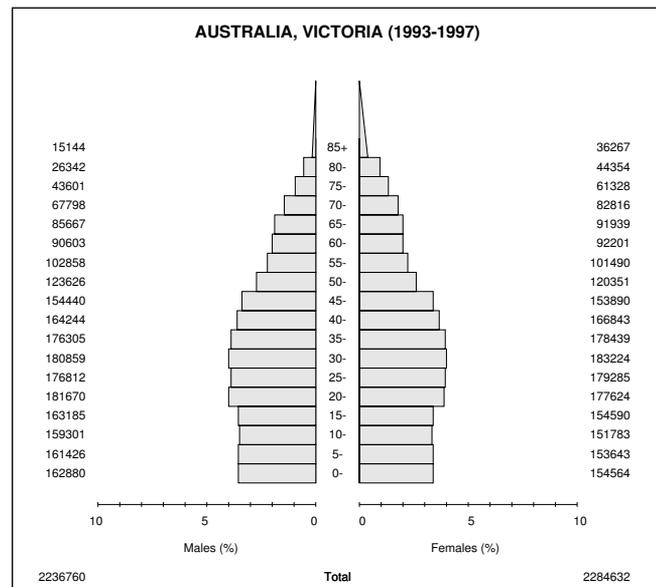
The registry is largely a passive notification system and receives reports from around 250 public and private hospitals and 50 pathology laboratories in Victoria and exchanges reports on non-residents with neighbouring states. Hospital data are received on handwritten forms, computer printouts or increasingly in electronic format. Notifications from pathologists are usually full copies of pathology reports in computer-readable format. Over 70 000 cancer notifications are processed in preparing each year of incidence data. Other sources of data include details of all death certificates supplied on magnetic tape by the Registrar of Births, Deaths and Marriages. Some active follow-up is pursued for cases in specialist sub-registers, e.g., for *in situ* and small invasive breast cancers, CNS neoplasms, childhood cancers and prostate cancers.

The data are rigorously checked for validity and consistency at input by the computer and routine checks are regularly run on the entire file, usually by calendar year subsets. Data quality is assured by matching pathology reports with hospital registrations for those cases where

diagnosis was based on histological confirmation. A consultant pathologist advises registry staff on coding matters and holds regular meetings to review procedures. For death certificate only registrations, correspondence is sent to the signatory doctor on the death certificate to confirm the diagnosis. The registry does not contact patients directly.

Use of the data

The registry produces regular statistical reports, and a regular pamphlet called CANSTAT which contains a topical epidemiological digest of cancer facts and figures. Within the Anti-Cancer Council, registry data are used to assess the extent of the cancer burden and to monitor and compare trends particularly in regard to cancers targeted by prevention programmes, e.g., skin, lung, breast and cervix. The registry also facilitates cancer management surveys by identifying random samples of patients and sending their treating doctors questionnaires regarding their patterns of care for individual patients. This approach has been found to be more timely, cost-effective and flexible than attempting to record treatments routinely. Cancers surveyed in this way have included breast, bowel, prostate, lung, testis, rectum, ovary and bladder. Perhaps one of the registry's most important functions is to facilitate epidemiological research. In addition to descriptive epidemiological analysis of registry data, the registry is used to follow up cancer events in cohort studies, to identify cases for case-control studies, and to confirm the occurrence of cancer in population-based studies of familial cancer of the breast, bowel and prostate.



Source of population

1991 and 1996 are census populations, adjusted for under-enumeration and Australian residents temporarily overseas. The intercensal estimates are obtained from the previous census by advancing age and allowing for births, deaths and migration. They are adjusted in the light of the succeeding census.

Ref: Mid-year estimated resident population (ERP) by age group and sex; Australia, States and Territories. Australian Bureau of Statistics Cat. No. 3201.0 (www.abs.gov.au).

Notes on the data

† C44 does not include basal cell or squamous cell carcinoma except for skin of lip and anus.

AUSTRALIA, VICTORIA (1993-1997)

SITE	MALE						FEMALE						ICD-10
	No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates (percent)		No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates (percent)		
Lip	809	1.5	7.2	5.5	0.33	0.63	327	0.7	2.9	1.7	0.08	0.19	C00
Tongue	291	0.5	2.6	2.1	0.15	0.26	180	0.4	1.6	1.1	0.07	0.12	C01-02
Mouth	312	0.6	2.8	2.2	0.16	0.28	214	0.5	1.9	1.3	0.08	0.14	C03-06
Salivary glands	113	0.2	1.0	0.8	0.04	0.08	88	0.2	0.8	0.5	0.04	0.05	C07-08
Tonsil	158	0.3	1.4	1.1	0.09	0.14	50	0.1	0.4	0.3	0.03	0.04	C09
Other oropharynx	63	0.1	0.6	0.5	0.03	0.06	15	0.0	0.1	0.1	0.00	0.01	C10
Nasopharynx	101	0.2	0.9	0.7	0.05	0.08	46	0.1	0.4	0.3	0.03	0.03	C11
Hypopharynx	196	0.4	1.8	1.4	0.08	0.19	38	0.1	0.3	0.2	0.01	0.03	C12-13
Pharynx unspecified	59	0.1	0.5	0.4	0.02	0.06	17	0.0	0.1	0.1	0.01	0.01	C14
Oesophagus	836	1.6	7.5	5.4	0.26	0.67	529	1.2	4.6	2.5	0.09	0.29	C15
Stomach	1649	3.1	14.7	10.6	0.48	1.25	910	2.0	8.0	4.5	0.21	0.51	C16
Small intestine	125	0.2	1.1	0.8	0.05	0.10	96	0.2	0.8	0.6	0.03	0.06	C17
Colon	4509	8.5	40.3	29.1	1.36	3.50	4425	9.9	38.7	22.6	1.09	2.68	C18
Rectum	2957	5.6	26.4	19.8	1.09	2.50	1956	4.4	17.1	10.8	0.63	1.29	C19-20
‡Anus	82	0.2	0.7	0.6	0.03	0.06	94	0.2	0.8	0.5	0.02	0.07	C21
Liver	525	1.0	4.7	3.5	0.17	0.46	194	0.4	1.7	1.1	0.05	0.14	C22
Gallbladder etc.	322	0.6	2.9	2.0	0.10	0.23	449	1.0	3.9	2.2	0.10	0.25	C23-24
Pancreas	1032	1.9	9.2	6.6	0.28	0.80	1017	2.3	8.9	4.6	0.16	0.50	C25
Nose, sinuses etc.	115	0.2	1.0	0.8	0.05	0.09	44	0.1	0.4	0.2	0.02	0.02	C30-31
Larynx	661	1.2	5.9	4.6	0.27	0.61	92	0.2	0.8	0.6	0.04	0.08	C32
Trachea, bronchus and lung	6699	12.6	59.9	43.4	1.91	5.62	3097	6.9	27.1	16.9	0.88	2.14	C33-34
Other thoracic organs	78	0.1	0.7	0.5	0.03	0.05	48	0.1	0.4	0.4	0.02	0.03	C37-38
Bone	147	0.3	1.3	1.2	0.07	0.10	137	0.3	1.2	1.1	0.07	0.09	C40-41
Melanoma of skin	3860	7.2	34.5	27.3	1.80	2.98	3697	8.3	32.4	24.6	1.75	2.52	C43
†Other skin	137		1.2	0.9	0.05	0.09	140		1.2	0.8	0.05	0.08	C44
Mesothelioma	378	0.7	3.4	2.5	0.12	0.33	83	0.2	0.7	0.5	0.03	0.06	C45
Kaposi sarcoma	183	0.3	1.6	1.3	0.10	0.12	22	0.0	0.2	0.1	0.00	0.01	C46
Connective and soft tissue	359	0.7	3.2	2.6	0.14	0.26	262	0.6	2.3	1.7	0.11	0.16	C47+C49
Breast	79	0.1	0.7	0.5	0.03	0.06	12529	28.0	109.7	81.4	6.08	9.26	C50
Vulva							253	0.6	2.2	1.3	0.08	0.15	C51
Vagina							64	0.1	0.6	0.4	0.02	0.04	C52
Cervix uteri							1216	2.7	10.6	8.1	0.62	0.81	C53
Corpus uteri							1923	4.3	16.8	12.0	0.86	1.44	C54
Uterus unspecified							0	0.0	0.0	0.0	0.00	0.00	C55
Ovary							1666	3.7	14.6	10.4	0.68	1.17	C56
Other female genital organs							70	0.2	0.6	0.4	0.03	0.05	C57
Placenta							5	0.0	0.0	0.0	0.00	0.00	C58
Penis	81	0.2	0.7	0.5	0.03	0.06							C60
Prostate	13492	25.3	120.6	84.8	3.07	10.60							C61
Testis	670	1.3	6.0	5.3	0.39	0.40							C62
Other male genital organs	29	0.1	0.3	0.2	0.01	0.02							C63
Kidney	1203	2.3	10.8	8.5	0.50	1.00	741	1.7	6.5	4.3	0.24	0.50	C64
Renal pelvis	92	0.2	0.8	0.6	0.03	0.07	89	0.2	0.8	0.5	0.02	0.06	C65
Ureter	57	0.1	0.5	0.4	0.02	0.05	25	0.1	0.2	0.1	0.01	0.02	C66
Bladder	3224	6.1	28.8	20.5	0.87	2.45	1051	2.3	9.2	5.2	0.23	0.61	C67
Other urinary organs	37	0.1	0.3	0.2	0.01	0.02	19	0.0	0.2	0.1	0.00	0.01	C68
Eye	151	0.3	1.4	1.1	0.07	0.12	104	0.2	0.9	0.8	0.05	0.07	C69
Brain, nervous system	930	1.7	8.3	7.0	0.43	0.71	742	1.7	6.5	5.2	0.32	0.50	C70-72
Thyroid	207	0.4	1.9	1.6	0.11	0.16	604	1.4	5.3	4.3	0.33	0.39	C73
Adrenal gland	37	0.1	0.3	0.4	0.02	0.03	31	0.1	0.3	0.3	0.02	0.02	C74
Other endocrine	16	0.0	0.1	0.1	0.01	0.01	8	0.0	0.1	0.1	0.00	0.00	C75
Hodgkin disease	304	0.6	2.7	2.4	0.16	0.19	235	0.5	2.1	1.8	0.12	0.14	C81
Non-Hodgkin lymphoma	2157	4.0	19.3	15.0	0.90	1.62	1758	3.9	15.4	10.2	0.61	1.13	C82-85,C96
Immunoproliferative diseases	22	0.0	0.2	0.1	0.01	0.02	18	0.0	0.2	0.1	0.00	0.01	C88
Multiple myeloma	578	1.1	5.2	3.7	0.15	0.41	473	1.1	4.1	2.5	0.13	0.30	C90
Lymphoid leukaemia	657	1.2	5.9	5.1	0.22	0.44	461	1.0	4.0	3.2	0.15	0.25	C91
Myeloid leukaemia	666	1.3	6.0	4.5	0.20	0.46	558	1.2	4.9	3.0	0.16	0.29	C92-94
Leukaemia unspecified	48	0.1	0.4	0.3	0.01	0.02	57	0.1	0.5	0.3	0.01	0.02	C95
Other and unspecified	1916	3.6	17.1	12.3	0.53	1.34	1906	4.3	16.7	9.2	0.39	0.98	O&U
All sites	53409		477.6	353.4	17.05	41.85	44873		392.8	266.9	16.86	29.85	ALL
All sites but C44	53272	100.0	476.3	352.5	17.00	41.76	44733	100.0	391.6	266.1	16.81	29.77	ALLbC44

‡54.9% of cases are anorectal tumours

‡55.3% of cases are anorectal tumours

†See note following population pyramid

Western Australia

Registration area

The registry covers the entire State of Western Australia, an area of 2 525 500 km², almost one third of the total area of Australia. The state lies between latitudes 13° and 35° S and longitudes 113° and 129° E, extending approximately 2400 km from north to south. The northern third of the state lies within the tropics, where desert or near-desert conditions prevail over some 900 000 km² and population density is sparse. Population distribution overall is extremely uneven; 70% of the population lives in the metropolitan area of the capital city Perth.

The Western Australian population of 1.8 million amounts to about 10% of the total population of Australia. The mining boom of the 1960s brought a rapid expansion in population and Western Australia now has a high proportion of migrant inhabitants; 69% of the population were born in Australia, 22% in New Zealand and 18% in Europe (including the United Kingdom). It is estimated that 2.6% of the population are aboriginals, for whom life expectancy is between 15 and 20 years less, on average, than for non-aboriginal persons.

From a largely rural-based economy before the 1960s, the state has diversified and is now a leading producer of several key minerals. Heavy manufacturing industry is relatively insignificant, but light manufacturing industry is widespread. As a result of favourable climatic conditions, air pollution has not been a major problem in Western Australia and the lack of heavy manufacturing industry ensures that water pollution is minimal. These issues have, however, become subjects of greater concern in years later than those covered by this data-set.

Cancer care facilities

Cancer therapy is concentrated in the Perth metropolitan area, the major (Government-operated) teaching hospitals and several private clinics acting as referral centres for country areas. The large area of the state and the consequent difficulties in providing access to treatment and other support services in rural areas continue to demand significant expenditure within the health sector.

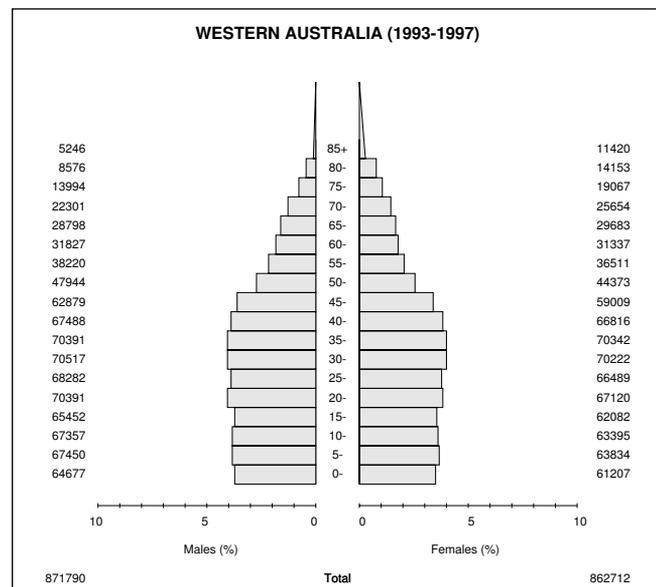
Registry structure and methods

Reporting of cancer in Western Australia became a statutory obligation for pathologists and radiation oncologists in August 1981, with the establishment of the population-based Western Australian Cancer Registry. Regulations require the reporting of cancers, *in situ* and benign CNS neoplasms, with the exception of SCC and BCC of the skin. Other non-melanoma skin cancers only became notifiable in 1996, although there are data for earlier years. Reports are received from all pathology laboratories, mostly now in electronic form.

Registry staff access medical records in major public hospitals to allow collection of additional data when necessary; enquiries are also made of private pathology laboratories and medical practitioners in case of need. Mortality information is routinely searched for outcomes of known cases, and additional cases are recorded if the information warrants it, and subjected to the routine

enquiry process. Search and matching routines are now fully computerized. The use of the state's acute hospital discharge database as a source of information of un-notified cases, such as those based on clinical and imaging methods alone, is currently being investigated.

Data recorded for each tumour include basis of diagnosis, address at diagnosis, and diagnosis date. For each cancer, site and histology are coded using ICD-O-2; the registry has used ICD-O-2 for both topography and morphology since early 2000. Demographic details such as date of birth, sex, address and country of birth are recorded, in addition to details of place, date and cause of death when available. For selected cancers, additional data (such as level and depth for melanomas) are stored in linked ancillary data files. The database is a relational structure consisting of individual linked Dbase3+ files controlled by a locally developed program using the Clipper5 compiler. Data entry, maintenance and analysis take place on a microcomputer network with a facility for multi-user simultaneous access. A variety of software including EPI5, EGRET, Excel and SPSS is used for statistical analyses of the data.



Source of population

1991 and 1996 are census populations, adjusted for under-enumeration and Australian residents temporarily overseas. The intercensal estimates are obtained from the previous census by advancing age and allowing for births, deaths and migration. They are adjusted in the light of the succeeding census.

Notes on the data

† C44 does not include basal cell or squamous cell carcinoma.

WESTERN AUSTRALIA (1993-1997)

SITE	MALE						FEMALE						ICD-10
	No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates 0-64 (percent)	Cum. rates 0-74 (percent)	No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates 0-64 (percent)	Cum. rates 0-74 (percent)	
Lip	361	1.9	8.3	6.9	0.45	0.72	147	1.0	3.4	2.5	0.14	0.27	C00
Tongue	114	0.6	2.6	2.3	0.17	0.27	60	0.4	1.4	1.0	0.07	0.13	C01-02
Mouth	163	0.9	3.7	3.3	0.23	0.41	78	0.5	1.8	1.4	0.08	0.18	C03-06
Salivary glands	54	0.3	1.2	1.0	0.06	0.10	34	0.2	0.8	0.6	0.03	0.06	C07-08
Tonsil	44	0.2	1.0	0.9	0.06	0.11	18	0.1	0.4	0.3	0.02	0.04	C09
Other oropharynx	15	0.1	0.3	0.3	0.02	0.04	6	0.0	0.1	0.1	0.01	0.01	C10
Nasopharynx	24	0.1	0.6	0.5	0.04	0.06	14	0.1	0.3	0.2	0.02	0.02	C11
Hypopharynx	74	0.4	1.7	1.5	0.09	0.19	8	0.1	0.2	0.2	0.01	0.02	C12-13
Pharynx unspecified	29	0.2	0.7	0.6	0.03	0.08	7	0.0	0.2	0.1	0.01	0.02	C14
Oesophagus	278	1.5	6.4	5.3	0.25	0.63	142	1.0	3.3	2.0	0.07	0.21	C15
Stomach	549	2.9	12.6	10.2	0.45	1.27	294	2.0	6.8	4.4	0.20	0.50	C16
Small intestine	47	0.2	1.1	0.8	0.03	0.11	45	0.3	1.0	0.8	0.04	0.10	C17
Colon	1428	7.6	32.8	26.8	1.28	3.20	1299	8.8	30.1	20.2	1.02	2.35	C18
Rectum	941	5.0	21.6	18.1	0.97	2.24	603	4.1	14.0	10.1	0.59	1.18	C19-20
Anus	40	0.2	0.9	0.7	0.04	0.09	35	0.2	0.8	0.6	0.03	0.07	C21
Liver	176	0.9	4.0	3.5	0.16	0.43	65	0.4	1.5	1.1	0.07	0.13	C22
Gallbladder etc.	108	0.6	2.5	2.0	0.10	0.22	125	0.8	2.9	1.9	0.08	0.24	C23-24
Pancreas	360	1.9	8.3	6.7	0.30	0.82	328	2.2	7.6	4.7	0.18	0.54	C25
Nose, sinuses etc.	43	0.2	1.0	0.8	0.04	0.09	24	0.2	0.6	0.4	0.02	0.03	C30-31
Larynx	208	1.1	4.8	4.1	0.23	0.54	29	0.2	0.7	0.6	0.04	0.08	C32
Trachea, bronchus and lung	2296	12.2	52.7	43.1	1.75	5.54	1059	7.2	24.6	17.8	0.91	2.22	C33-34
Other thoracic organs	26	0.1	0.6	0.5	0.04	0.05	7	0.0	0.2	0.1	0.01	0.01	C37-38
Bone	59	0.3	1.4	1.3	0.08	0.10	49	0.3	1.1	1.1	0.07	0.08	C40-41
Melanoma of skin	2115	11.2	48.5	41.5	2.81	4.51	1629	11.1	37.8	30.7	2.22	3.12	C43
†Other skin	528		12.1	9.5	0.40	0.95	297		6.9	4.5	0.22	0.46	C44
Mesothelioma	274	1.5	6.3	5.2	0.30	0.63	36	0.2	0.8	0.6	0.05	0.07	C45
Kaposi sarcoma	16	0.1	0.4	0.3	0.02	0.03	6	0.0	0.1	0.1	0.01	0.01	C46
Connective and soft tissue	108	0.6	2.5	2.1	0.11	0.21	75	0.5	1.7	1.5	0.09	0.14	C47+C49
Breast	32	0.2	0.7	0.6	0.03	0.08	4374	29.7	101.4	81.1	6.00	9.22	C50
Vulva							88	0.6	2.0	1.5	0.08	0.17	C51
Vagina							30	0.2	0.7	0.5	0.02	0.05	C52
Cervix uteri							443	3.0	10.3	8.3	0.62	0.85	C53
Corpus uteri							499	3.4	11.6	9.2	0.62	1.14	C54
Uterus unspecified							1	0.0	0.0	0.0	0.00	0.00	C55
Ovary							431	2.9	10.0	7.8	0.50	0.92	C56
Other female genital organs							16	0.1	0.4	0.3	0.03	0.04	C57
Placenta							1	0.0	0.0	0.0	0.00	0.00	C58
Penis	21	0.1	0.5	0.4	0.02	0.05							C60
Prostate	5280	28.0	121.1	99.9	3.93	13.05							C61
Testis	249	1.3	5.7	5.0	0.38	0.40							C62
Other male genital organs	10	0.1	0.2	0.2	0.01	0.03							C63
Kidney	330	1.8	7.6	6.6	0.40	0.80	219	1.5	5.1	3.9	0.23	0.45	C64
Renal pelvis	26	0.1	0.6	0.5	0.01	0.05	26	0.2	0.6	0.4	0.01	0.04	C65
Ureter	10	0.1	0.2	0.2	0.00	0.02	11	0.1	0.3	0.2	0.01	0.03	C66
Bladder	519	2.8	11.9	9.4	0.33	0.99	153	1.0	3.5	2.3	0.09	0.27	C67
Other urinary organs	9	0.0	0.2	0.2	0.01	0.02	8	0.1	0.2	0.1	0.00	0.01	C68
Eye	49	0.3	1.1	1.1	0.07	0.09	38	0.3	0.9	0.6	0.03	0.07	C69
Brain, nervous system	290	1.5	6.7	5.9	0.38	0.59	219	1.5	5.1	4.4	0.28	0.43	C70-72
Thyroid	97	0.5	2.2	1.9	0.14	0.19	255	1.7	5.9	5.0	0.37	0.48	C73
Adrenal gland	12	0.1	0.3	0.3	0.02	0.02	11	0.1	0.3	0.3	0.02	0.02	C74
Other endocrine	6	0.0	0.1	0.1	0.01	0.01	4	0.0	0.1	0.1	0.00	0.01	C75
Hodgkin disease	66	0.4	1.5	1.4	0.10	0.11	74	0.5	1.7	1.6	0.10	0.13	C81
Non-Hodgkin lymphoma	599	3.2	13.7	11.5	0.63	1.28	528	3.6	12.2	9.0	0.54	0.99	C82-85,C96
Immunoproliferative diseases	13	0.1	0.3	0.3	0.01	0.03	7	0.0	0.2	0.1	0.00	0.01	C88
Multiple myeloma	178	0.9	4.1	3.3	0.15	0.37	147	1.0	3.4	2.4	0.13	0.30	C90
Lymphoid leukaemia	220	1.2	5.0	4.7	0.24	0.44	147	1.0	3.4	3.1	0.16	0.26	C91
Myeloid leukaemia	196	1.0	4.5	3.9	0.18	0.42	173	1.2	4.0	3.0	0.16	0.28	C92-94
Leukaemia unspecified	31	0.2	0.7	0.5	0.02	0.05	26	0.2	0.6	0.4	0.01	0.03	C95
Other and unspecified	634	3.4	14.5	11.7	0.50	1.27	580	3.9	13.4	8.3	0.32	0.91	O&U
All sites	19355		444.0	369.2	18.06	44.01	15028		348.4	263.3	16.64	29.42	ALL
All sites but C44	18827	100.0	431.9	359.7	17.66	43.06	14731	100.0	341.5	258.7	16.43	28.97	ALLbC44

†See note following population pyramid

New Zealand

Registration area

New Zealand is situated in the south Pacific Ocean, 1600 km southeast of Australia. It is a long mountainous country surrounded by a large expanse of ocean. The total land area (including offshore islands) is 270 534 km². In 1997 more than three-quarters of the people lived in main or secondary urban areas of 10 000 people or more. One in three people lived in the Auckland region and approximately one in ten in each of the Wellington and Canterbury regions.

Cancer care facilities

Cancer care in New Zealand is predominantly state-funded, supplemented by private hospitals and private practitioners. Cancer surgery and chemotherapy services are provided in the main centres of population and there are six radiotherapy centres.

Registry structure and methods

The New Zealand Cancer Registry is located in the New Zealand Health Information Service (NZHIS) which is a unit of the New Zealand Ministry of Health in Wellington. The registry has operated since 1948. The New Zealand Cancer Registry is staffed by six clinical coders and one support staff. Honorary consultants include pathologists, epidemiologists and an oncologist.

The collection of cancer registration data underwent a fundamental change in 1994. Until 1993 cancer notification was based on compulsory reporting of all cases treated in publicly funded hospitals, and voluntary reporting of privately treated cases. There was believed to be significant under-reporting of cancers diagnosed and treated outside of public hospitals, in particular early-stage melanoma of the skin, early bowel cancer, and cancer of the female breast.

The current sources of registration information include laboratory reports (received from 47 laboratories nationwide), discharge reports from public and private hospitals, general practitioners' records, death certificates, coroners' findings and autopsy reports. All cancer registrations are coded by registry staff. Data are stored in a computer database and most edits are automated.

Staging is done but there are a large number of cases for whom this information is not reported

Interpreting the results

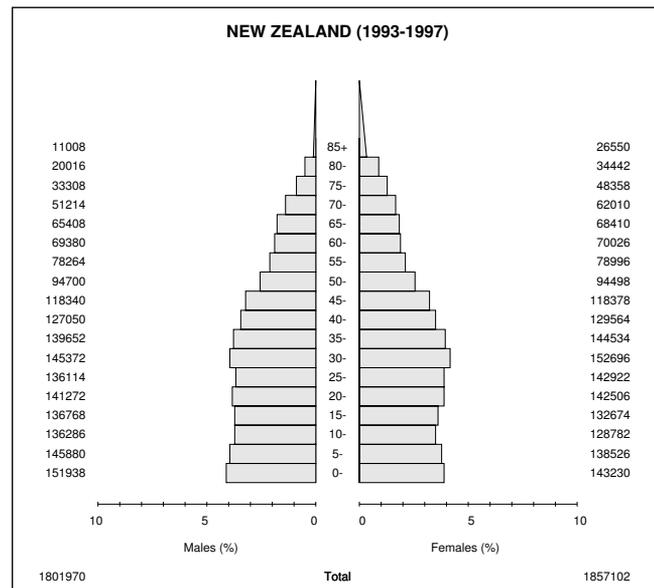
Legislation that came into force in 1994 introduced compulsory reporting of all cancers diagnosed in laboratories. The effect of this change was an increase in reported cancers that were treated outside public hospitals. The overall number of cancer registrations in 1995 was more than 24% higher than in 1993. Cancer death statistics were not affected by the change in legislation.

The National Cervical Screening Programme (NCSP) is a population-based programme that was originally established in 1990. In 1993 the basis for registration in the programme was

changed from 'opt on' to 'opt-off'. The programme recommends three-yearly screens for women aged between ages 20 and 69, and letters are sent to women when they are due for a smear test. Priority groups that have been targeted include women who have never had a smear test before, women over 35 years, Maori and Pacific Island women. In December 1996, 78% of eligible women were enrolled in the programme. Breast cancer screening was introduced in 1999.

Ethnic breakdowns of registration and death data are not reported here. The definition of ethnicity for vital events changed in September 1995 from a biological concept to one of cultural affiliation. The effect was a large increase in the number of deaths classified as Maori. As a consequence, ethnic mortality data for 1995 are not comparable to those for either earlier or later years. The ethnicity definition change also affected cancer registrations.

The new ethnic definition was also used in the 1996 census and had a significant impact on population statistics.



Source of population

Annual estimates of the 'usually resident' population supplied by Statistics New Zealand, based on a five-yearly census and taking into account births, deaths and migration.

Notes on the data

† C44 does not include basal cell or squamous cell carcinoma.

† C67 does not include non-invasive tumours.

NEW ZEALAND (1993-1997)

SITE	MALE						FEMALE						ICD-10
	No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates 0-64 (percent)	Cum. rates 0-74 (percent)	No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates 0-64 (percent)	Cum. rates 0-74 (percent)	
Lip	181	0.4	2.0	1.6	0.10	0.17	87	0.2	0.9	0.6	0.03	0.06	C00
Tongue	169	0.4	1.9	1.6	0.11	0.18	87	0.2	0.9	0.6	0.03	0.07	C01-02
Mouth	151	0.4	1.7	1.4	0.10	0.18	103	0.3	1.1	0.7	0.04	0.08	C03-06
Salivary glands	91	0.2	1.0	0.8	0.04	0.09	58	0.2	0.6	0.4	0.02	0.05	C07-08
Tonsil	81	0.2	0.9	0.7	0.05	0.09	22	0.1	0.2	0.2	0.01	0.02	C09
Other oropharynx	19	0.0	0.2	0.2	0.01	0.03	11	0.0	0.1	0.1	0.01	0.01	C10
Nasopharynx	80	0.2	0.9	0.8	0.06	0.09	24	0.1	0.3	0.2	0.02	0.02	C11
Hypopharynx	69	0.2	0.8	0.6	0.03	0.09	16	0.0	0.2	0.1	0.01	0.02	C12-13
Pharynx unspecified	29	0.1	0.3	0.2	0.01	0.03	11	0.0	0.1	0.1	0.00	0.01	C14
Oesophagus	671	1.7	7.4	5.7	0.24	0.72	359	1.0	3.9	2.1	0.09	0.22	C15
Stomach	1156	2.9	12.8	9.8	0.42	1.15	718	2.0	7.7	4.4	0.18	0.46	C16
Small intestine	111	0.3	1.2	1.0	0.05	0.12	70	0.2	0.8	0.5	0.03	0.06	C17
Colon	3644	9.1	40.4	31.2	1.53	3.79	4132	11.5	44.5	28.6	1.53	3.42	C18
Rectum	2270	5.6	25.2	20.0	1.07	2.50	1534	4.3	16.5	11.1	0.65	1.34	C19-20
‡Anus	92	0.2	1.0	0.8	0.04	0.10	118	0.3	1.3	0.9	0.05	0.10	C21
Liver	417	1.0	4.6	3.8	0.24	0.45	213	0.6	2.3	1.5	0.08	0.18	C22
Gallbladder etc.	164	0.4	1.8	1.4	0.06	0.15	235	0.7	2.5	1.5	0.07	0.16	C23-24
Pancreas	751	1.9	8.3	6.4	0.29	0.74	781	2.2	8.4	5.0	0.22	0.59	C25
Nose, sinuses etc.	57	0.1	0.6	0.5	0.04	0.05	45	0.1	0.5	0.3	0.02	0.03	C30-31
Larynx	354	0.9	3.9	3.2	0.19	0.41	63	0.2	0.7	0.5	0.02	0.06	C32
Trachea, bronchus and lung	4991	12.4	55.4	42.2	1.87	5.32	2867	8.0	30.9	21.5	1.20	2.81	C33-34
Other thoracic organs	107	0.3	1.2	1.0	0.06	0.10	37	0.1	0.4	0.3	0.02	0.03	C37-38
Bone	115	0.3	1.3	1.2	0.08	0.10	97	0.3	1.0	1.0	0.05	0.08	C40-41
Melanoma of skin	3602	8.9	40.0	32.8	2.10	3.63	3618	10.1	39.0	30.6	2.20	3.15	C43
†Other skin	99		1.1	0.8	0.03	0.08	83		0.9	0.5	0.03	0.05	C44
Mesothelioma	217	0.5	2.4	1.9	0.10	0.25	29	0.1	0.3	0.2	0.01	0.03	C45
Kaposi sarcoma	42	0.1	0.5	0.4	0.03	0.03	2	0.0	0.0	0.0	0.00	0.00	C46
Connective and soft tissue	307	0.8	3.4	2.8	0.16	0.28	230	0.6	2.5	2.0	0.13	0.19	C47+C49
Breast	64	0.2	0.7	0.6	0.03	0.06	9116	25.5	98.2	75.8	5.64	8.37	C50
Vulva							203	0.6	2.2	1.4	0.07	0.15	C51
Vagina							64	0.2	0.7	0.5	0.03	0.05	C52
Cervix uteri							1080	3.0	11.6	9.6	0.75	0.97	C53
Corpus uteri							1160	3.2	12.5	9.4	0.66	1.17	C54
Uterus unspecified							55	0.2	0.6	0.4	0.02	0.03	C55
Ovary							1330	3.7	14.3	10.9	0.76	1.22	C56
Other female genital organs							67	0.2	0.7	0.5	0.04	0.06	C57
Placenta							14	0.0	0.2	0.1	0.01	0.01	C58
Penis	60	0.1	0.7	0.5	0.02	0.06							C60
Prostate	10601	26.3	117.7	85.5	2.53	10.27							C61
Testis	588	1.5	6.5	5.8	0.44	0.46							C62
Other male genital organs	13	0.0	0.1	0.1	0.01	0.01							C63
Kidney	960	2.4	10.7	8.6	0.49	0.97	584	1.6	6.3	4.5	0.25	0.51	C64
Renal pelvis	28	0.1	0.3	0.2	0.01	0.03	26	0.1	0.3	0.2	0.01	0.02	C65
Ureter	32	0.1	0.4	0.3	0.01	0.03	15	0.0	0.2	0.1	0.00	0.01	C66
†Bladder	1900	4.7	21.1	15.7	0.64	1.80	682	1.9	7.3	4.4	0.19	0.49	C67
Other urinary organs	12	0.0	0.1	0.1	0.00	0.01	8	0.0	0.1	0.1	0.00	0.00	C68
Eye	143	0.4	1.6	1.4	0.08	0.14	102	0.3	1.1	0.9	0.06	0.09	C69
Brain, nervous system	681	1.7	7.6	6.7	0.44	0.65	550	1.5	5.9	5.0	0.31	0.50	C70-72
Thyroid	179	0.4	2.0	1.7	0.13	0.18	397	1.1	4.3	3.5	0.27	0.36	C73
Adrenal gland	33	0.1	0.4	0.4	0.02	0.03	33	0.1	0.4	0.4	0.02	0.03	C74
Other endocrine	20	0.0	0.2	0.2	0.01	0.02	8	0.0	0.1	0.1	0.00	0.00	C75
Hodgkin disease	177	0.4	2.0	1.8	0.12	0.15	119	0.3	1.3	1.1	0.07	0.10	C81
Non-Hodgkin lymphoma	1300	3.2	14.4	11.8	0.68	1.33	1155	3.2	12.4	8.7	0.51	0.98	C82-85,C96
Immunoproliferative diseases	0	0.0	0.0	0.0	0.00	0.00	0	0.0	0.0	0.0	0.00	0.00	C88
Multiple myeloma	503	1.2	5.6	4.2	0.19	0.49	458	1.3	4.9	3.0	0.15	0.35	C90
Lymphoid leukaemia	748	1.9	8.3	7.0	0.32	0.66	545	1.5	5.9	4.2	0.19	0.38	C91
Myeloid leukaemia	562	1.4	6.2	5.0	0.24	0.49	481	1.3	5.2	3.7	0.21	0.37	C92-94
Leukaemia unspecified	43	0.1	0.5	0.4	0.01	0.03	45	0.1	0.5	0.3	0.01	0.02	C95
Other and unspecified	1673	4.2	18.6	14.0	0.59	1.53	1919	5.4	20.7	12.2	0.56	1.30	O&U
All sites	40357		447.9	346.8	16.12	40.32	35866		386.3	276.4	17.56	30.86	ALL
All sites but C44	40258	100.0	446.8	345.9	16.09	40.24	35783	100.0	385.4	275.9	17.53	30.81	ALLbC44

‡42.4% of cases are anorectal tumours

‡33.9% of cases are anorectal tumours

†See note following population pyramid

USA, Hawaii

Registration area

The State of Hawaii, comprising the populated islands of Oahu, Maui, Hawaii, Molokai, Lanai, Kauai and Niihau lies in the northern Pacific Ocean, 3861 km from San Francisco, California, and is geographically part of Oceania. It lies between latitudes 18° and 22° N, longitudes 154° and 160° W, the total registration area being 16 638 km². Of the total population, 72% lives in the greater urban area of Honolulu and over 85% lives in urban areas.

The most striking feature of cancer incidence and survival in Hawaii is the degree of variation between the different ethnic groups. Accordingly, the Hawaii data for this monograph are presented in five ethnic tabulations (white, Chinese, Japanese, Filipino, Hawaiian) to permit comparisons within Hawaii, as well as with other registries.

Hawaii has long been a melting pot of different ethnic groups and cultures. Only 23% of the population is of Caucasian origin. Japanese comprise 19% and native Hawaiians (a Polynesian population), 20%; the Hawaii series represents one of the longest-standing cancer registries for these two unique groups. Other sizeable ethnic groups include Filipinos (16%), Chinese (7%), Koreans (2%) and African-Americans (2%). Other Asian groups comprise 2% and other Pacific Islanders 3% of the population. Hawaii has a large percentage of people of mixed race (21%). Mixed race is more common in younger generations; the percentage mixed is 26% for individuals younger than age 50 years and 10% for individuals 50 years and older.

Registry structure and methods

The Hawaii Tumor Registry, which has been in operation since 1960, is a state-wide registry designed to monitor trends in cancer incidence and survival in order to promote research in cancer etiology, prevention and control. The registry has been associated with the US Surveillance, Epidemiology and End Results (SEER) Program since 1973 and receives its financial support from the US National Cancer Institute and the State of Hawaii.

Cases are identified through all hospitals in the state, private pathology laboratories and clinics, and through computer searches of the death files in the Department of Health. Tumour registrars are supported by the large hospitals and report all incident cases to the registry. Staff members of the registry visit each of the smaller hospitals and other facilities periodically to review medical records and identify new cases. Increasingly, cancer cases are being identified in non-hospital facilities. Data quality checks on the

completeness of case ascertainment, abstraction and follow-up are performed regularly by both the National Cancer Institute and the registry. In addition, the Hawaii Oncology Data Management Association, comprising over 20 cancer registrars, most of whom are certified, provides a series of educational programmes for all hospital registrars and registry staff.

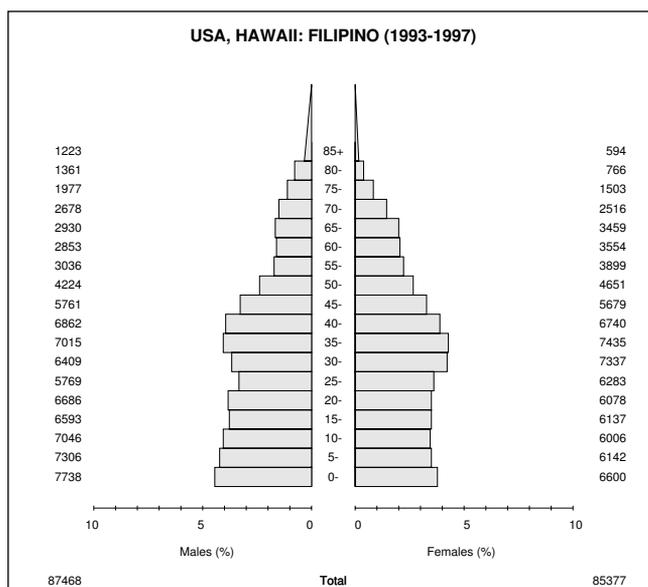
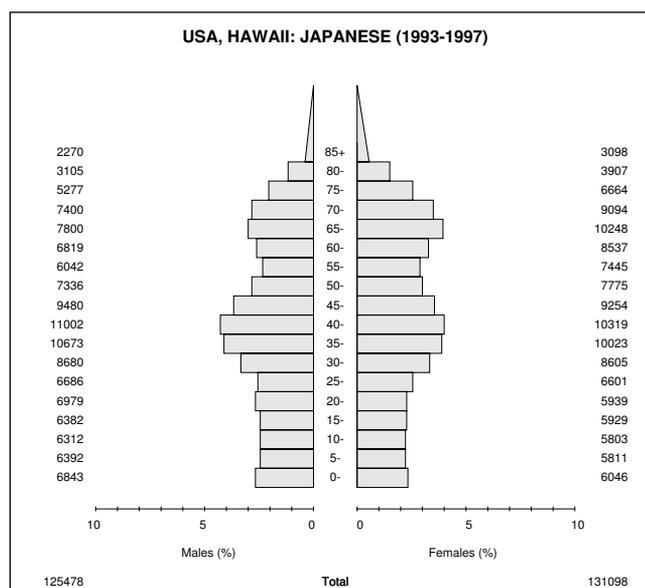
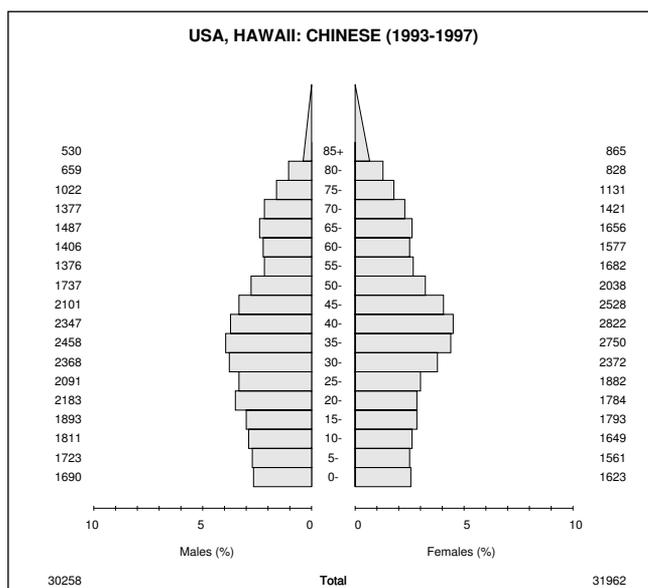
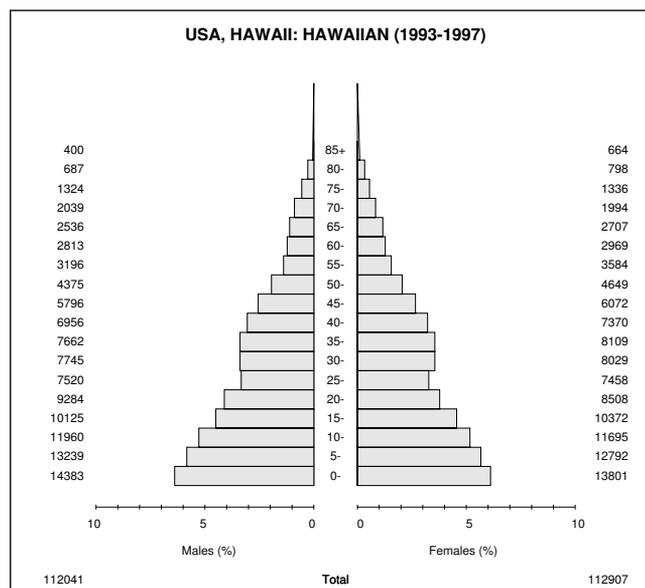
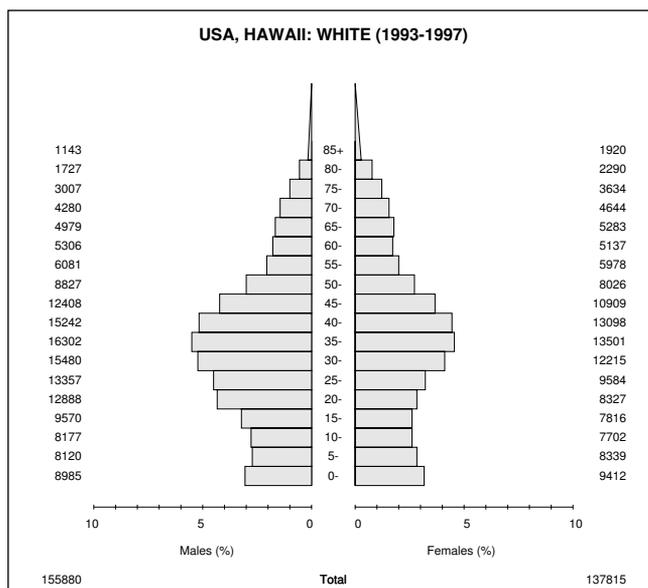
Interpreting the results

A special problem with the generation of population estimates in Hawaii has been the inadequacy of the US census data. The ethnic distribution in the census data until 2000 was too crude to capture the richness of the state's distribution and the race definitions have been inconsistent over time. In order to maintain consistency in the temporal trends for cancer in the state, and to provide more correct estimates of the ethnic distribution of the population, the Health Surveillance Program of the Hawaii Department of Health began to develop separate population estimates from the US census, based on an annual random household interview survey, where detailed ethnic information was collected. That information was used to apportion the census sex and age group counts to ethnic groups. These recomputed estimates are the basis for the incidence rates in this monograph. The 2000 census population estimates capture a detailed ethnic distribution and agree well with the state estimates. The state will now rely on census estimates for censal years and on state estimates during intercensal years.

Use of the data

Squamous and basal cell carcinomas of the skin are the only cancers for which data are not routinely collected. In addition to identifying all incident cases, the registry collects information on various demographic characteristics, diagnostic procedures, clinical findings, treatment, histology and staging. Follow-up information is obtained annually.

Statistical data are released on request to qualified individuals and agencies, including local hospitals, physicians, educators, researchers and health-care providers. A special commission comprising eight physicians representing the Department of Health, Hawaii Medical Association, American Cancer Society (Texas-Hawaii Division) and the University of Hawaii Medical School oversees the release of all confidential information and sets the policy in this regard. The data in the registry are especially valuable as a resource for epidemiological research in the ethnically diverse population of Hawaii.



Source of population

The population for each year is estimated on the basis of the 1990 census (US Bureau of the Census), taking into account the results of household surveys.

Notes on the data

† C44 does not include basal cell or squamous cell carcinoma except for skin of anus.

USA, HAWAII: WHITE (1993-1997)

SITE	MALE						FEMALE						ICD-10
	No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates 0-64 (percent)	Cum. rates 0-74	No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates 0-64 (percent)	Cum. rates 0-74	
Lip	20	0.5	2.6	2.0	0.14	0.21	4	0.1	0.6	0.3	0.02	0.02	C00
Tongue	44	1.1	5.6	4.9	0.33	0.65	16	0.5	2.3	1.6	0.12	0.20	C01-02
Mouth	28	0.7	3.6	3.2	0.21	0.44	18	0.6	2.6	1.9	0.10	0.24	C03-06
Salivary glands	11	0.3	1.4	1.1	0.08	0.12	7	0.2	1.0	0.7	0.06	0.06	C07-08
Tonsil	28	0.7	3.6	3.1	0.28	0.37	7	0.2	1.0	0.8	0.05	0.11	C09
Other oropharynx	11	0.3	1.4	1.2	0.12	0.14	2	0.1	0.3	0.2	0.02	0.02	C10
Nasopharynx	10	0.3	1.3	1.1	0.08	0.14	3	0.1	0.4	0.4	0.04	0.06	C11
Hypopharynx	19	0.5	2.4	2.1	0.13	0.26	6	0.2	0.9	0.8	0.06	0.10	C12-13
Pharynx unspecified	5	0.1	0.6	0.6	0.06	0.08	1	0.0	0.1	0.1	0.00	0.02	C14
Oesophagus	41	1.1	5.3	4.1	0.17	0.54	16	0.5	2.3	1.4	0.07	0.16	C15
Stomach	73	1.9	9.4	7.1	0.36	0.85	44	1.5	6.4	3.4	0.12	0.37	C16
Small intestine	19	0.5	2.4	2.1	0.08	0.29	13	0.4	1.9	1.1	0.03	0.18	C17
Colon	302	7.8	38.7	30.0	1.40	3.55	223	7.4	32.4	18.5	0.69	2.18	C18
Rectum	108	2.8	13.9	11.2	0.66	1.43	90	3.0	13.1	9.0	0.61	1.03	C19-20
Anus	8	0.2	1.0	1.0	0.07	0.11	8	0.3	1.2	0.8	0.05	0.11	C21
Liver	47	1.2	6.0	5.0	0.26	0.66	18	0.6	2.6	1.5	0.09	0.14	C22
Gallbladder etc.	10	0.3	1.3	0.9	0.02	0.09	12	0.4	1.7	1.2	0.06	0.16	C23-24
Pancreas	76	2.0	9.8	7.5	0.39	0.82	75	2.5	10.9	6.5	0.32	0.72	C25
Nose, sinuses etc.	9	0.2	1.2	0.8	0.03	0.10	5	0.2	0.7	0.6	0.06	0.10	C30-31
Larynx	60	1.6	7.7	6.7	0.52	0.88	9	0.3	1.3	0.9	0.08	0.10	C32
Trachea, bronchus and lung	502	13.0	64.4	50.6	2.17	6.60	350	11.7	50.8	33.4	1.62	4.40	C33-34
Other thoracic organs	3	0.1	0.4	0.4	0.04	0.04	3	0.1	0.4	0.5	0.03	0.03	C37-38
Bone	9	0.2	1.2	1.0	0.07	0.14	6	0.2	0.9	1.0	0.05	0.07	C40-41
Melanoma of skin	308	8.0	39.5	31.1	2.14	3.35	186	6.2	27.0	20.4	1.49	1.95	C43
†Other skin	17		2.2	1.5	0.09	0.15	19		2.8	1.9	0.14	0.20	C44
Mesothelioma	25	0.6	3.2	2.3	0.08	0.27	3	0.1	0.4	0.3	0.01	0.03	C45
Kaposi sarcoma	81	2.1	10.4	7.0	0.60	0.60	0	0.0	0.0	0.0	0.00	0.00	C46
Connective and soft tissue	27	0.7	3.5	3.0	0.15	0.24	22	0.7	3.2	2.6	0.14	0.27	C47+C49
Breast	8	0.2	1.0	0.8	0.05	0.10	985	32.8	142.9	101.1	7.22	11.58	C50
Vulva							21	0.7	3.0	2.0	0.11	0.21	C51
Vagina							4	0.1	0.6	0.4	0.03	0.03	C52
Cervix uteri							62	2.1	9.0	7.0	0.57	0.67	C53
Corpus uteri							149	5.0	21.6	15.5	0.99	1.91	C54
Uterus unspecified							3	0.1	0.4	0.2	0.01	0.01	C55
Ovary							136	4.5	19.7	14.4	1.02	1.53	C56
Other female genital organs							7	0.2	1.0	0.8	0.06	0.10	C57
Placenta							0	0.0	0.0	0.0	0.00	0.00	C58
Penis	4	0.1	0.5	0.4	0.03	0.03							C60
Prostate	990	25.7	127.0	99.8	4.06	13.06							C61
Testis	75	1.9	9.6	7.1	0.51	0.51							C62
Other male genital organs	6	0.2	0.8	0.6	0.04	0.06							C63
Kidney	95	2.5	12.2	10.0	0.62	1.26	42	1.4	6.1	4.3	0.31	0.51	C64
Renal pelvis	9	0.2	1.2	1.0	0.04	0.17	6	0.2	0.9	0.5	0.02	0.06	C65
Ureter	5	0.1	0.6	0.6	0.02	0.08	3	0.1	0.4	0.3	0.02	0.06	C66
Bladder	243	6.3	31.2	23.9	1.07	2.76	66	2.2	9.6	5.6	0.30	0.56	C67
Other urinary organs	1	0.0	0.1	0.1	0.00	0.00	0	0.0	0.0	0.0	0.00	0.00	C68
Eye	3	0.1	0.4	0.3	0.01	0.05	3	0.1	0.4	0.4	0.06	0.06	C69
Brain, nervous system	55	1.4	7.1	6.2	0.41	0.60	37	1.2	5.4	4.6	0.28	0.40	C70-72
Thyroid	39	1.0	5.0	4.0	0.27	0.48	67	2.2	9.7	7.6	0.58	0.62	C73
Adrenal gland	1	0.0	0.1	0.1	0.01	0.01	0	0.0	0.0	0.0	0.00	0.00	C74
Other endocrine	1	0.0	0.1	0.1	0.01	0.01	0	0.0	0.0	0.0	0.00	0.00	C75
Hodgkin disease	24	0.6	3.1	2.7	0.19	0.27	15	0.5	2.2	1.8	0.15	0.15	C81
Non-Hodgkin lymphoma	179	4.7	23.0	17.2	1.04	1.81	97	3.2	14.1	9.0	0.47	0.91	C82-85, C96
Immunoproliferative diseases	4	0.1	0.5	0.5	0.03	0.05	1	0.0	0.1	0.1	0.00	0.02	C88
Multiple myeloma	39	1.0	5.0	3.9	0.18	0.41	18	0.6	2.6	1.4	0.04	0.15	C90
Lymphoid leukaemia	47	1.2	6.0	5.7	0.31	0.53	29	1.0	4.2	3.4	0.16	0.28	C91
Myeloid leukaemia	48	1.2	6.2	5.1	0.28	0.47	26	0.9	3.8	2.7	0.18	0.34	C92-94
Leukaemia unspecified	4	0.1	0.5	0.3	0.00	0.02	2	0.1	0.3	0.2	0.01	0.03	C95
Other and unspecified	84	2.2	10.8	8.7	0.45	1.03	78	2.6	11.3	7.1	0.29	0.74	O&U
All sites	3865		495.9	391.5	20.32	46.85	3023		438.7	302.1	18.98	33.93	ALL
All sites but C44	3848	100.0	493.7	390.0	20.24	46.70	3004	100.0	435.9	300.2	18.84	33.73	ALLbC44

†See note following population pyramid

USA, HAWAII: CHINESE (1993-1997)

SITE	MALE						FEMALE						ICD-10
	No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates (percent)		No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates (percent)		
Lip	0	0.0	0.0	0.0	0.00	0.00	0	0.0	0.0	0.0	0.00	0.00	C00
Tongue	7	0.9	4.6	2.5	0.13	0.34	4	0.6	2.5	1.5	0.16	0.16	C01-02
Mouth	3	0.4	2.0	1.3	0.10	0.10	3	0.5	1.9	0.5	0.00	0.07	C03-06
Salivary glands	1	0.1	0.7	0.3	0.00	0.07	2	0.3	1.3	0.6	0.04	0.04	C07-08
Tonsil	1	0.1	0.7	0.2	0.00	0.00	1	0.2	0.6	0.1	0.00	0.00	C09
Other oropharynx	1	0.1	0.7	0.3	0.00	0.07	0	0.0	0.0	0.0	0.00	0.00	C10
Nasopharynx	22	2.9	14.5	10.7	0.88	1.15	8	1.2	5.0	3.8	0.30	0.36	C11
Hypopharynx	3	0.4	2.0	0.9	0.04	0.04	0	0.0	0.0	0.0	0.00	0.00	C12-13
Pharynx unspecified	0	0.0	0.0	0.0	0.00	0.00	0	0.0	0.0	0.0	0.00	0.00	C14
Oesophagus	9	1.2	5.9	3.5	0.29	0.43	3	0.5	1.9	1.0	0.06	0.20	C15
Stomach	23	3.0	15.2	7.3	0.27	0.82	19	3.0	11.9	4.0	0.09	0.44	C16
Small intestine	0	0.0	0.0	0.0	0.00	0.00	2	0.3	1.3	0.2	0.00	0.00	C17
Colon	57	7.4	37.7	18.4	0.89	2.08	54	8.4	33.8	14.2	0.63	1.64	C18
Rectum	34	4.4	22.5	10.4	0.46	1.09	24	3.7	15.0	6.7	0.28	0.74	C19-20
Anus	0	0.0	0.0	0.0	0.00	0.00	1	0.2	0.6	0.2	0.00	0.00	C21
Liver	18	2.3	11.9	7.2	0.52	0.80	17	2.6	10.6	4.8	0.24	0.50	C22
Gallbladder etc.	5	0.7	3.3	1.6	0.06	0.20	9	1.4	5.6	2.0	0.06	0.27	C23-24
Pancreas	32	4.2	21.2	10.1	0.46	1.09	19	3.0	11.9	4.5	0.12	0.60	C25
Nose, sinuses etc.	2	0.3	1.3	0.7	0.00	0.14	1	0.2	0.6	0.5	0.06	0.06	C30-31
Larynx	6	0.8	4.0	1.9	0.11	0.19	0	0.0	0.0	0.0	0.00	0.00	C32
Trachea, bronchus and lung	116	15.1	76.7	38.2	1.35	5.37	69	10.7	43.2	18.3	0.68	2.20	C33-34
Other thoracic organs	3	0.4	2.0	1.9	0.17	0.17	2	0.3	1.3	0.5	0.00	0.06	C37-38
Bone	1	0.1	0.7	1.2	0.06	0.06	0	0.0	0.0	0.0	0.00	0.00	C40-41
Melanoma of skin	2	0.3	1.3	0.4	0.00	0.07	1	0.2	0.6	0.4	0.04	0.04	C43
†Other skin	2		1.3	0.5	0.00	0.07	4		2.5	1.6	0.05	0.18	C44
Mesothelioma	5	0.7	3.3	1.2	0.00	0.22	0	0.0	0.0	0.0	0.00	0.00	C45
Kaposi sarcoma	3	0.4	2.0	1.5	0.13	0.13	0	0.0	0.0	0.0	0.00	0.00	C46
Connective and soft tissue	3	0.4	2.0	1.0	0.05	0.05	5	0.8	3.1	2.5	0.15	0.21	C47+C49
Breast	2	0.3	1.3	0.8	0.06	0.06	217	33.7	135.8	79.3	5.33	9.58	C50
Vulva							3	0.5	1.9	0.5	0.00	0.00	C51
Vagina							1	0.2	0.6	0.1	0.00	0.00	C52
Cervix uteri							11	1.7	6.9	3.8	0.30	0.44	C53
Corpus uteri							36	5.6	22.5	13.8	0.93	1.73	C54
Uterus unspecified							5	0.8	3.1	1.4	0.10	0.10	C55
Ovary							24	3.7	15.0	10.8	0.83	1.30	C56
Other female genital organs							1	0.2	0.6	0.4	0.04	0.04	C57
Placenta							0	0.0	0.0	0.0	0.00	0.00	C58
Penis	0	0.0	0.0	0.0	0.00	0.00							C60
Prostate	255	33.3	168.5	79.2	2.85	10.76							C61
Testis	7	0.9	4.6	3.8	0.30	0.30							C62
Other male genital organs	2	0.3	1.3	0.5	0.00	0.07							C63
Kidney	23	3.0	15.2	9.2	0.49	0.99	5	0.8	3.1	1.1	0.06	0.06	C64
Renal pelvis	2	0.3	1.3	0.8	0.07	0.07	0	0.0	0.0	0.0	0.00	0.00	C65
Ureter	1	0.1	0.7	0.2	0.00	0.00	2	0.3	1.3	0.5	0.00	0.06	C66
Bladder	30	3.9	19.8	9.5	0.37	1.07	9	1.4	5.6	2.5	0.05	0.25	C67
Other urinary organs	0	0.0	0.0	0.0	0.00	0.00	1	0.2	0.6	0.4	0.00	0.06	C68
Eye	1	0.1	0.7	0.6	0.05	0.05	1	0.2	0.6	0.9	0.05	0.05	C69
Brain, nervous system	9	1.2	5.9	6.3	0.40	0.47	5	0.8	3.1	3.1	0.12	0.19	C70-72
Thyroid	8	1.0	5.3	4.6	0.44	0.44	15	2.3	9.4	6.7	0.48	0.74	C73
Adrenal gland	0	0.0	0.0	0.0	0.00	0.00	0	0.0	0.0	0.0	0.00	0.00	C74
Other endocrine	1	0.1	0.7	0.3	0.00	0.07	0	0.0	0.0	0.0	0.00	0.00	C75
Hodgkin disease	0	0.0	0.0	0.0	0.00	0.00	0	0.0	0.0	0.0	0.00	0.00	C81
Non-Hodgkin lymphoma	31	4.0	20.5	11.9	0.81	1.31	22	3.4	13.8	6.2	0.24	0.68	C82-85,C96
Immunoproliferative diseases	1	0.1	0.7	0.2	0.00	0.00	0	0.0	0.0	0.0	0.00	0.00	C88
Multiple myeloma	4	0.5	2.6	1.3	0.00	0.21	6	0.9	3.8	1.9	0.06	0.24	C90
Lymphoid leukaemia	7	0.9	4.6	3.3	0.24	0.38	4	0.6	2.5	1.2	0.06	0.20	C91
Myeloid leukaemia	11	1.4	7.3	5.2	0.31	0.46	10	1.6	6.3	3.8	0.14	0.27	C92-94
Leukaemia unspecified	0	0.0	0.0	0.0	0.00	0.00	1	0.2	0.6	0.5	0.04	0.04	C95
Other and unspecified	14	1.8	9.3	4.1	0.14	0.42	21	3.3	13.1	5.1	0.26	0.53	O&U
All sites	768		507.6	264.9	12.50	31.85	648		405.5	211.7	12.05	24.34	ALL
All sites but C44	766	100.0	506.3	264.4	12.50	31.78	644	100.0	403.0	210.1	12.00	24.16	ALLbC44

†See note following population pyramid

USA, HAWAII: FILIPINO (1993-1997)

SITE	MALE						FEMALE						ICD-10
	No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates 0-64 (percent)	Cum. rates 0-74 (percent)	No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates 0-64 (percent)	Cum. rates 0-74 (percent)	
Lip	0	0.0	0.0	0.0	0.00	0.00	1	0.1	0.2	0.2	0.03	0.03	C00
Tongue	16	0.9	3.7	2.4	0.13	0.28	4	0.3	0.9	0.8	0.07	0.11	C01-02
Mouth	10	0.5	2.3	1.5	0.07	0.17	4	0.3	0.9	0.7	0.03	0.08	C03-06
Salivary glands	5	0.3	1.1	0.8	0.02	0.09	3	0.3	0.7	0.5	0.04	0.04	C07-08
Tonsil	7	0.4	1.6	1.2	0.04	0.18	1	0.1	0.2	0.2	0.00	0.03	C09
Other oropharynx	1	0.1	0.2	0.1	0.00	0.04	0	0.0	0.0	0.0	0.00	0.00	C10
Nasopharynx	17	0.9	3.9	3.5	0.28	0.39	8	0.7	1.9	1.5	0.08	0.15	C11
Hypopharynx	12	0.7	2.7	1.9	0.07	0.25	1	0.1	0.2	0.2	0.03	0.03	C12-13
Pharynx unspecified	1	0.1	0.2	0.3	0.04	0.04	0	0.0	0.0	0.0	0.00	0.00	C14
Oesophagus	13	0.7	3.0	1.7	0.01	0.23	4	0.3	0.9	0.6	0.00	0.03	C15
Stomach	52	2.9	11.9	8.5	0.43	1.00	17	1.5	4.0	3.1	0.20	0.42	C16
Small intestine	4	0.2	0.9	0.9	0.10	0.10	4	0.3	0.9	0.8	0.07	0.11	C17
Colon	139	7.6	31.8	22.1	1.26	2.60	90	7.7	21.1	16.4	0.91	1.96	C18
Rectum	91	5.0	20.8	16.3	1.06	1.99	44	3.8	10.3	7.7	0.38	0.84	C19-20
Anus	0	0.0	0.0	0.0	0.00	0.00	2	0.2	0.5	0.3	0.00	0.04	C21
Liver	55	3.0	12.6	9.9	0.65	1.16	12	1.0	2.8	2.0	0.04	0.16	C22
Gallbladder etc.	9	0.5	2.1	1.5	0.09	0.20	16	1.4	3.7	2.6	0.07	0.34	C23-24
Pancreas	64	3.5	14.6	8.5	0.24	0.88	25	2.1	5.9	4.1	0.13	0.43	C25
Nose, sinuses etc.	2	0.1	0.5	0.3	0.00	0.03	2	0.2	0.5	0.3	0.00	0.03	C30-31
Larynx	11	0.6	2.5	1.8	0.07	0.18	1	0.1	0.2	0.2	0.02	0.02	C32
Trachea, bronchus and lung	311	17.1	71.1	54.9	3.05	7.13	116	9.9	27.2	20.5	1.03	2.36	C33-34
Other thoracic organs	4	0.2	0.9	0.6	0.03	0.07	0	0.0	0.0	0.0	0.00	0.00	C37-38
Bone	7	0.4	1.6	1.5	0.11	0.14	1	0.1	0.2	0.3	0.02	0.02	C40-41
Melanoma of skin	9	0.5	2.1	1.2	0.02	0.17	2	0.2	0.5	0.3	0.01	0.01	C43
†Other skin	3		0.7	0.8	0.05	0.05	2		0.5	0.5	0.03	0.03	C44
Mesothelioma	3	0.2	0.7	0.3	0.00	0.04	0	0.0	0.0	0.0	0.00	0.00	C45
Kaposi sarcoma	8	0.4	1.8	1.5	0.11	0.15	0	0.0	0.0	0.0	0.00	0.00	C46
Connective and soft tissue	11	0.6	2.5	2.0	0.13	0.24	5	0.4	1.2	1.3	0.11	0.11	C47+C49
Breast	3	0.2	0.7	0.6	0.03	0.07	325	27.9	76.1	61.8	4.89	7.06	C50
Vulva							3	0.3	0.7	0.5	0.02	0.02	C51
Vagina							4	0.3	0.9	0.6	0.00	0.08	C52
Cervix uteri							47	4.0	11.0	9.2	0.74	0.80	C53
Corpus uteri							68	5.8	15.9	13.4	1.17	1.57	C54
Uterus unspecified							3	0.3	0.7	0.6	0.05	0.08	C55
Ovary							51	4.4	11.9	10.4	0.85	0.96	C56
Other female genital organs							4	0.3	0.9	0.6	0.02	0.06	C57
Placenta							0	0.0	0.0	0.0	0.00	0.00	C58
Penis							2	0.1	0.5	0.4	0.00	0.07	C60
Prostate	610	33.5	139.5	82.4	2.08	9.70							C61
Testis	4	0.2	0.9	0.8	0.07	0.07							C62
Other male genital organs	3	0.2	0.7	0.5	0.01	0.09							C63
Kidney	33	1.8	7.5	6.2	0.50	0.69	14	1.2	3.3	2.7	0.24	0.28	C64
Renal pelvis	1	0.1	0.2	0.2	0.00	0.03	2	0.2	0.5	0.4	0.03	0.03	C65
Ureter	1	0.1	0.2	0.1	0.00	0.00	1	0.1	0.2	0.1	0.00	0.00	C66
Bladder	40	2.2	9.1	7.0	0.35	0.96	13	1.1	3.0	2.2	0.15	0.23	C67
Other urinary organs	0	0.0	0.0	0.0	0.00	0.00	0	0.0	0.0	0.0	0.00	0.00	C68
Eye	1	0.1	0.2	0.2	0.02	0.02	0	0.0	0.0	0.0	0.00	0.00	C69
Brain, nervous system	17	0.9	3.9	3.6	0.23	0.33	15	1.3	3.5	3.2	0.15	0.34	C70-72
Thyroid	26	1.4	5.9	5.0	0.29	0.54	97	8.3	22.7	19.4	1.52	1.91	C73
Adrenal gland	2	0.1	0.5	0.6	0.03	0.03	0	0.0	0.0	0.0	0.00	0.00	C74
Other endocrine	0	0.0	0.0	0.0	0.00	0.00	0	0.0	0.0	0.0	0.00	0.00	C75
Hodgkin disease	4	0.2	0.9	0.9	0.05	0.05	8	0.7	1.9	1.6	0.12	0.12	C81
Non-Hodgkin lymphoma	74	4.1	16.9	11.1	0.51	1.06	62	5.3	14.5	11.5	0.66	1.25	C82-85,C96
Immunoproliferative diseases	6	0.3	1.4	1.0	0.04	0.14	2	0.2	0.5	0.4	0.03	0.07	C88
Multiple myeloma	20	1.1	4.6	3.2	0.15	0.41	19	1.6	4.5	3.2	0.15	0.36	C90
Lymphoid leukaemia	11	0.6	2.5	2.2	0.11	0.26	7	0.6	1.6	2.1	0.13	0.13	C91
Myeloid leukaemia	46	2.5	10.5	8.5	0.50	0.86	21	1.8	4.9	4.2	0.18	0.44	C92-94
Leukaemia unspecified	4	0.2	0.9	0.4	0.00	0.07	3	0.3	0.7	0.8	0.03	0.06	C95
Other and unspecified	53	2.9	12.1	8.4	0.47	0.87	34	2.9	8.0	5.7	0.24	0.53	O&U
All sites	1826		417.5	289.2	13.52	34.10	1168		273.6	219.8	14.66	23.72	ALL
All sites but C44	1823	100.0	416.8	288.3	13.47	34.05	1166	100.0	273.1	219.3	14.63	23.69	ALLbC44

†See note following population pyramid

USA, HAWAII: HAWAIIAN (1993-1997)

SITE	MALE						FEMALE						ICD-10
	No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates 0-64 (percent)	Cum. rates 0-74 (percent)	No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates 0-64 (percent)	Cum. rates 0-74 (percent)	
Lip	0	0.0	0.0	0.0	0.00	0.00	0	0.0	0.0	0.0	0.00	0.00	C00
Tongue	11	0.8	2.0	2.6	0.21	0.28	1	0.1	0.2	0.1	0.00	0.00	C01-02
Mouth	12	0.9	2.1	2.8	0.21	0.38	7	0.5	1.2	1.1	0.03	0.08	C03-06
Salivary glands	5	0.4	0.9	0.9	0.05	0.10	3	0.2	0.5	0.6	0.06	0.06	C07-08
Tonsil	2	0.1	0.4	0.4	0.03	0.03	1	0.1	0.2	0.3	0.03	0.03	C09
Other oropharynx	3	0.2	0.5	0.7	0.08	0.08	2	0.1	0.4	0.4	0.00	0.05	C10
Nasopharynx	17	1.3	3.0	3.6	0.33	0.37	5	0.3	0.9	0.9	0.04	0.11	C11
Hypopharynx	7	0.5	1.2	1.8	0.15	0.23	1	0.1	0.2	0.3	0.03	0.03	C12-13
Pharynx unspecified	0	0.0	0.0	0.0	0.00	0.00	0	0.0	0.0	0.0	0.00	0.00	C14
Oesophagus	27	2.0	4.8	6.0	0.26	0.98	7	0.5	1.2	1.5	0.12	0.20	C15
Stomach	67	5.0	12.0	14.8	0.90	1.90	40	2.6	7.1	7.3	0.32	0.78	C16
Small intestine	7	0.5	1.2	1.5	0.12	0.12	5	0.3	0.9	1.0	0.06	0.10	C17
Colon	98	7.3	17.5	21.6	1.53	2.49	81	5.3	14.3	16.1	0.87	1.92	C18
Rectum	64	4.8	11.4	14.2	0.86	1.81	36	2.4	6.4	7.5	0.59	0.93	C19-20
‡Anus	6	0.4	1.1	1.3	0.05	0.13	5	0.3	0.9	1.0	0.04	0.19	C21
Liver	45	3.4	8.0	9.9	0.64	1.24	17	1.1	3.0	3.1	0.14	0.26	C22
Gallbladder etc.	10	0.7	1.8	2.1	0.12	0.30	11	0.7	1.9	2.3	0.17	0.25	C23-24
Pancreas	42	3.1	7.5	8.7	0.45	1.10	37	2.4	6.6	7.1	0.33	0.73	C25
Nose, sinuses etc.	6	0.4	1.1	1.1	0.03	0.13	0	0.0	0.0	0.0	0.00	0.00	C30-31
Larynx	24	1.8	4.3	5.3	0.33	0.65	8	0.5	1.4	1.6	0.06	0.24	C32
Trachea, bronchus and lung	286	21.4	51.1	64.9	4.28	8.77	198	13.0	35.1	40.4	2.21	5.24	C33-34
Other thoracic organs	2	0.1	0.4	0.4	0.04	0.04	2	0.1	0.4	0.4	0.02	0.07	C37-38
Bone	8	0.6	1.4	1.3	0.08	0.08	3	0.2	0.5	0.5	0.03	0.03	C40-41
Melanoma of skin	10	0.7	1.8	2.0	0.10	0.23	9	0.6	1.6	1.7	0.11	0.16	C43
†Other skin	7		1.2	1.4	0.10	0.14	6		1.1	1.1	0.08	0.13	C44
Mesothelioma	7	0.5	1.2	1.4	0.01	0.25	0	0.0	0.0	0.0	0.00	0.00	C45
Kaposi sarcoma	10	0.7	1.8	1.8	0.14	0.14	1	0.1	0.2	0.1	0.00	0.00	C46
Connective and soft tissue	11	0.8	2.0	2.3	0.17	0.21	14	0.9	2.5	2.6	0.19	0.33	C47+C49
Breast	4	0.3	0.7	0.8	0.05	0.09	493	32.4	87.3	101.3	7.65	12.31	C50
Vulva							4	0.3	0.7	0.8	0.07	0.07	C51
Vagina							5	0.3	0.9	1.1	0.10	0.14	C52
Cervix uteri							52	3.4	9.2	10.2	0.72	1.16	C53
Corpus uteri							129	8.5	22.9	26.6	2.15	3.12	C54
Uterus unspecified							4	0.3	0.7	0.8	0.07	0.12	C55
Ovary							68	4.5	12.0	13.4	0.87	1.44	C56
Other female genital organs							3	0.2	0.5	0.7	0.07	0.07	C57
Placenta							0	0.0	0.0	0.0	0.00	0.00	C58
Penis	1	0.1	0.2	0.2	0.00	0.00							C60
Prostate	251	18.8	44.8	53.7	1.94	7.41							C61
Testis	24	1.8	4.3	4.2	0.30	0.30							C62
Other male genital organs	2	0.1	0.4	0.5	0.00	0.08							C63
Kidney	35	2.6	6.2	7.6	0.47	1.07	24	1.6	4.3	4.8	0.29	0.55	C64
Renal pelvis	3	0.2	0.5	0.6	0.00	0.08	1	0.1	0.2	0.2	0.00	0.04	C65
Ureter	2	0.1	0.4	0.4	0.03	0.03	2	0.1	0.4	0.3	0.00	0.05	C66
Bladder	31	2.3	5.5	6.8	0.38	0.93	17	1.1	3.0	3.4	0.13	0.38	C67
Other urinary organs	0	0.0	0.0	0.0	0.00	0.00	0	0.0	0.0	0.0	0.00	0.00	C68
Eye	3	0.2	0.5	0.5	0.02	0.02	1	0.1	0.2	0.2	0.01	0.01	C69
Brain, nervous system	18	1.3	3.2	3.2	0.23	0.27	23	1.5	4.1	4.1	0.25	0.33	C70-72
Thyroid	23	1.7	4.1	4.6	0.36	0.45	58	3.8	10.3	11.0	0.87	1.03	C73
Adrenal gland	1	0.1	0.2	0.2	0.01	0.01	0	0.0	0.0	0.0	0.00	0.00	C74
Other endocrine	1	0.1	0.2	0.2	0.01	0.01	1	0.1	0.2	0.2	0.01	0.01	C75
Hodgkin disease	4	0.3	0.7	0.7	0.05	0.05	9	0.6	1.6	1.5	0.13	0.13	C81
Non-Hodgkin lymphoma	54	4.0	9.6	11.0	0.72	1.12	43	2.8	7.6	8.1	0.55	0.78	C82-85,C96
Immunoproliferative diseases	0	0.0	0.0	0.0	0.00	0.00	0	0.0	0.0	0.0	0.00	0.00	C88
Multiple myeloma	21	1.6	3.7	4.7	0.33	0.59	19	1.2	3.4	3.8	0.17	0.51	C90
Lymphoid leukaemia	13	1.0	2.3	2.4	0.13	0.22	11	0.7	1.9	2.0	0.11	0.14	C91
Myeloid leukaemia	18	1.3	3.2	3.3	0.15	0.35	18	1.2	3.2	3.6	0.27	0.40	C92-94
Leukaemia unspecified	1	0.1	0.2	0.2	0.00	0.05	4	0.3	0.7	0.6	0.00	0.04	C95
Other and unspecified	38	2.8	6.8	8.3	0.53	0.92	39	2.6	6.9	7.0	0.33	0.69	O&U
All sites	1342		239.6	289.2	17.00	36.24	1528		270.7	305.0	20.36	35.46	ALL
All sites but C44	1335	100.0	238.3	287.8	16.90	36.09	1522	100.0	269.6	303.9	20.28	35.32	ALLbC44

‡33.3% of cases are anorectal tumours

†See note following population pyramid

USA, HAWAII: JAPANESE (1993-1997)

SITE	MALE						FEMALE						ICD-10
	No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates (percent)		No. cases	Freq. (%)	Crude rate (per 100,000)	ASR world	Cum. rates (percent)		
Lip	1	0.0	0.2	0.1	0.01	0.01	1	0.0	0.2	0.0	0.00	0.01	C00
Tongue	22	0.6	3.5	2.0	0.14	0.25	17	0.5	2.6	1.4	0.07	0.10	C01-02
Mouth	26	0.7	4.1	1.8	0.08	0.24	10	0.3	1.5	0.6	0.04	0.06	C03-06
Salivary glands	7	0.2	1.1	0.5	0.01	0.07	3	0.1	0.5	0.5	0.04	0.04	C07-08
Tonsil	7	0.2	1.1	0.4	0.01	0.04	1	0.0	0.2	0.1	0.01	0.01	C09
Other oropharynx	0	0.0	0.0	0.0	0.00	0.00	0	0.0	0.0	0.0	0.00	0.00	C10
Nasopharynx	10	0.3	1.6	1.1	0.05	0.09	2	0.1	0.3	0.1	0.00	0.01	C11
Hypopharynx	23	0.6	3.7	1.8	0.11	0.20	0	0.0	0.0	0.0	0.00	0.00	C12-13
Pharynx unspecified	1	0.0	0.2	0.1	0.01	0.01	0	0.0	0.0	0.0	0.00	0.00	C14
Oesophagus	74	2.0	11.8	5.4	0.30	0.71	8	0.2	1.2	0.4	0.01	0.03	C15
Stomach	304	8.1	48.5	18.8	0.74	2.17	178	5.5	27.2	7.9	0.19	0.81	C16
Small intestine	14	0.4	2.2	1.0	0.05	0.13	5	0.2	0.8	0.2	0.00	0.02	C17
Colon	457	12.2	72.8	32.6	1.72	4.05	386	12.0	58.9	21.4	1.05	2.46	C18
Rectum	237	6.3	37.8	18.4	1.16	2.28	135	4.2	20.6	9.2	0.58	1.08	C19-20
‡Anus	4	0.1	0.6	0.3	0.02	0.04	4	0.1	0.6	0.2	0.00	0.02	C21
Liver	89	2.4	14.2	6.2	0.35	0.77	54	1.7	8.2	3.4	0.17	0.43	C22
Gallbladder etc.	32	0.9	5.1	2.1	0.10	0.20	31	1.0	4.7	1.6	0.07	0.15	C23-24
Pancreas	132	3.5	21.0	8.6	0.40	1.02	111	3.4	16.9	5.6	0.22	0.61	C25
Nose, sinuses etc.	7	0.2	1.1	0.7	0.05	0.09	10	0.3	1.5	0.8	0.05	0.06	C30-31
Larynx	38	1.0	6.1	2.9	0.18	0.36	3	0.1	0.5	0.2	0.01	0.02	C32
Trachea, bronchus and lung	504	13.4	80.3	32.7	1.34	4.13	265	8.2	40.4	14.4	0.70	1.77	C33-34
Other thoracic organs	9	0.2	1.4	1.2	0.08	0.09	7	0.2	1.1	0.4	0.02	0.05	C37-38
Bone	5	0.1	0.8	1.0	0.06	0.07	2	0.1	0.3	0.2	0.01	0.02	C40-41
Melanoma of skin	9	0.2	1.4	0.7	0.04	0.06	14	0.4	2.1	1.3	0.10	0.16	C43
†Other skin	8		1.3	0.9	0.05	0.09	7		1.1	0.5	0.03	0.04	C44
Mesothelioma	3	0.1	0.5	0.2	0.01	0.01	1	0.0	0.2	0.0	0.00	0.00	C45
Kaposi sarcoma	10	0.3	1.6	1.3	0.10	0.10	0	0.0	0.0	0.0	0.00	0.00	C46
Connective and soft tissue	19	0.5	3.0	1.8	0.11	0.22	22	0.7	3.4	1.9	0.10	0.15	C47+C49
Breast	6	0.2	1.0	0.5	0.04	0.04	1068	33.2	162.9	83.7	6.17	9.85	C50
Vulva							6	0.2	0.9	0.3	0.01	0.02	C51
Vagina							6	0.2	0.9	0.3	0.03	0.04	C52
Cervix uteri							51	1.6	7.8	4.5	0.34	0.42	C53
Corpus uteri							209	6.5	31.9	17.3	1.31	1.92	C54
Uterus unspecified							7	0.2	1.1	0.7	0.06	0.08	C55
Ovary							115	3.6	17.5	9.8	0.74	1.08	C56
Other female genital organs							7	0.2	1.1	0.5	0.03	0.06	C57
Placenta							1	0.0	0.2	0.1	0.01	0.01	C58
Penis	2	0.1	0.3	0.2	0.03	0.03							C60
Prostate	1049	27.9	167.2	62.1	1.76	8.10							C61
Testis	17	0.5	2.7	2.2	0.17	0.17							C62
Other male genital organs	4	0.1	0.6	0.3	0.00	0.05							C63
Kidney	73	1.9	11.6	6.4	0.48	0.72	49	1.5	7.5	3.2	0.24	0.32	C64
Renal pelvis	13	0.3	2.1	0.7	0.03	0.05	4	0.1	0.6	0.1	0.00	0.01	C65
Ureter	9	0.2	1.4	0.7	0.05	0.11	2	0.1	0.3	0.1	0.00	0.02	C66
Bladder	178	4.7	28.4	12.0	0.70	1.32	57	1.8	8.7	3.4	0.19	0.44	C67
Other urinary organs	3	0.1	0.5	0.1	0.00	0.00	1	0.0	0.2	0.0	0.00	0.01	C68
Eye	2	0.1	0.3	0.2	0.01	0.01	1	0.0	0.2	0.0	0.00	0.00	C69
Brain, nervous system	31	0.8	4.9	3.2	0.20	0.32	26	0.8	4.0	2.8	0.15	0.23	C70-72
Thyroid	26	0.7	4.1	1.9	0.10	0.14	62	1.9	9.5	7.3	0.60	0.68	C73
Adrenal gland	3	0.1	0.5	0.2	0.00	0.03	2	0.1	0.3	0.1	0.00	0.01	C74
Other endocrine	0	0.0	0.0	0.0	0.00	0.00	0	0.0	0.0	0.0	0.00	0.00	C75
Hodgkin disease	4	0.1	0.6	0.5	0.04	0.05	7	0.2	1.1	0.5	0.03	0.04	C81
Non-Hodgkin lymphoma	132	3.5	21.0	9.7	0.43	1.09	124	3.9	18.9	8.0	0.43	0.93	C82-85,C96
Immunoproliferative diseases	2	0.1	0.3	0.1	0.00	0.01	2	0.1	0.3	0.1	0.00	0.00	C88
Multiple myeloma	21	0.6	3.3	1.3	0.05	0.15	18	0.6	2.7	0.8	0.03	0.10	C90
Lymphoid leukaemia	18	0.5	2.9	2.4	0.14	0.17	12	0.4	1.8	1.2	0.07	0.10	C91
Myeloid leukaemia	41	1.1	6.5	3.1	0.17	0.33	25	0.8	3.8	2.6	0.14	0.18	C92-94
Leukaemia unspecified	11	0.3	1.8	0.7	0.03	0.06	6	0.2	0.9	0.2	0.00	0.00	C95
Other and unspecified	71	1.9	11.3	4.5	0.16	0.48	81	2.5	12.4	4.3	0.19	0.43	O&U
All sites	3768		600.6	257.4	11.90	30.94	3226		492.1	224.1	14.25	25.11	ALL
All sites but C44	3760	100.0	599.3	256.5	11.85	30.85	3219	100.0	491.1	223.6	14.21	25.06	ALLbC44

‡50.0% of cases are anorectal tumours

‡75.0% of cases are anorectal tumours

†See note following population pyramid