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of Cancer Registries

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Switzerland, Ticino

Registration area

The Canton of Ticino is situated at the southern extremity of Switzerland. It has a total area of 2812 km² and is bordered on the north by the Canton of Uri, on the east by the Canton of Graubünden and Italy and on the south and west by Italy. The highest point is 3402 m and the lowest 194m above sea level. The climate is temperate, with average temperatures ranging between 4.0° C in January and 21.8° C in August; the annual rainfall amounts to 1564 mm (1997). The quality of the air has been measured in Ticino since 1990: the annual average pollutant concentrations observed are 13 µg/m³ for SO₂, 44 µg/m³ for NO₂ and 218 µg/m³ for O₃ (city of Lugano, 1996).

In 1997, 19.6% of the population were younger than 20 years and 16.8% were aged 65 or more. The age composition reflects the immigration of individuals of working age. 73% of the population are Swiss citizens and 27% are foreigners, mainly from Italy and ex-Yugoslavia. The majority of the population is Christian, with 84% Roman Catholics. The official language is Italian. Employment distribution is: 1.7% in agriculture and forestry, 24.8% in industry and 71.8% in the service sector (1990 census).

Cancer care facilities

In 1997, there were five public regional hospitals and four district hospitals, for a total of 1042 beds and 695 physicians (hospital-based and private practitioners) in the canton.

The Cancer Registry of Ticino was founded in 1995 by the local government. Collection of population-based data began in 1996. The Cantone Ticino provides most of the budget; additional funds are obtained from the Federal Ministry of Health, through the Swiss Association of Cancer Registries.

It is located in the Cantonal Institute of Pathology. A physician and a data manager are responsible for active collection and coding of data. Reporting of cancer cases is done on a voluntary basis. About 80% of cases are reported by the Cantonal Institute of Pathology and Cytology. Additional cases come from the main hospitals, the radiotherapy and oncology centres, the haematology laboratory, oncologists, general practitioners and from the Cancer Registries of Geneva, Vaud, Basel, Zürich and St Gall (mostly skin cancer). Autopsies are performed on 5% of all deaths. Death certificates with a diagnosis of cancer are scrutinized and additional information is found by mailing a questionnaire to the physician or by looking at the hospital chart. Online checking of the inhabitants of the canton is performed on the terminal of the Cantonal Population Registry office.

Information collected includes date of symptom onset and stage (TNM and pTNM, Breslow and Clark for skin tumours, diameter in mm and axillary nodes for breast cancer).

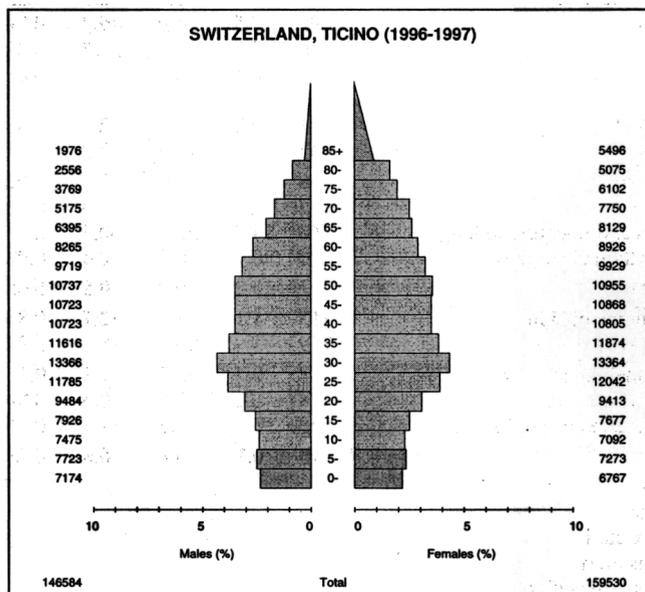
All information is manually checked and coded by the registry staff before entry into the computer. The computers run a preliminary validity test upon entry of the data and a second check is performed daily by the staff. Over 200 consistency checks are performed monthly, in addition to the IARC-Check program.

Interpretation of the data

There are no population-based screening programmes in the Canton of Ticino. Spontaneous screening is well accepted by the population, for both breast and cervical cancer.

Use of the data

It is planned to undertake active follow-up of selected tumours within the context of the EUROCARE European project on survival.



Source of population

1990 Census. Censimento federale della popolazione svizzera, Popolazione residente secondo il sesso e l'età Annuario statistico ticinese, Ufficio cantonale di statistica, 1997, pp. 40-41. 1996-97 estimates: Popolazione permanente per sesso e per età, Annuario statistico ticinese, Ufficio cantonale di statistica, 1997, pp. 50-51 (method based on official numbers of births, deaths and migration).

Notes on the data

* The data are from the first years of registration and may include prevalent cases.

† C44 does not include basal cell carcinomas.

Note: the Swiss mortality data were not available for the full period and are not published in this volume, although they were used as indicators of completeness in the editorial review.

*SWITZERLAND, TICINO (1996-1997)

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	2	0.1	0.7	0.4	0.00	0.04	1	0.1	0.3	0.2	0.00	0.03	C00
Tongue	12	0.8	4.1	2.6	0.26	0.31	3	0.2	0.9	0.5	0.02	0.05	C01-02
Mouth	16	1.1	5.5	3.6	0.28	0.42	2	0.1	0.6	0.3	0.02	0.02	C03-06
Salivary glands	2	0.1	0.7	0.3	0.03	0.03	4	0.3	1.3	0.7	0.05	0.08	C07-08
Tonsil	9	0.6	3.1	1.7	0.12	0.21	0	0.0	0.0	0.0	0.00	0.00	C09
Other oropharynx	6	0.4	2.0	1.4	0.07	0.16	0	0.0	0.0	0.0	0.00	0.00	C10
Nasopharynx	1	0.1	0.3	0.2	0.00	0.04	1	0.1	0.3	0.0	0.00	0.00	C11
Hypopharynx	11	0.8	3.8	2.5	0.25	0.29	0	0.0	0.0	0.0	0.00	0.00	C12-13
Pharynx unspecified	3	0.2	1.0	0.7	0.05	0.09	0	0.0	0.0	0.0	0.00	0.00	C14
Oesophagus	41	2.9	14.0	8.4	0.50	1.00	7	0.5	2.2	0.8	0.05	0.12	C15
Stomach	78	5.5	26.6	14.4	0.76	1.69	58	4.3	18.2	6.5	0.25	0.82	C16
Small intestine	4	0.3	1.4	0.9	0.00	0.17	8	0.6	2.5	1.5	0.11	0.23	C17
Colon	129	9.0	44.0	23.1	0.90	2.63	117	8.7	36.7	15.0	0.69	1.73	C18
Rectum	56	3.9	19.1	10.7	0.54	1.44	50	3.7	15.7	7.5	0.43	1.09	C19-20
Anus	1	0.1	0.3	0.1	0.00	0.00	10	0.7	3.1	1.2	0.07	0.10	C21
Liver	59	4.1	20.1	12.5	0.62	1.66	11	0.8	3.4	1.4	0.10	0.14	C22
Gallbladder etc.	14	1.0	4.8	2.8	0.21	0.35	13	1.0	4.1	1.9	0.10	0.26	C23-24
Pancreas	39	2.7	13.3	8.2	0.47	0.98	39	2.9	12.2	5.2	0.29	0.67	C25
Nose, sinuses etc.	3	0.2	1.0	0.7	0.00	0.13	1	0.1	0.3	0.2	0.02	0.02	C30-31
Larynx	35	2.5	11.9	7.5	0.58	1.02	6	0.4	1.9	1.2	0.07	0.16	C32
Trachea, bronchus and lung	229	16.0	78.1	46.5	2.09	6.67	72	5.3	22.6	12.6	0.79	1.65	C33-34
Other thoracic organs	2	0.1	0.7	0.4	0.03	0.06	3	0.2	0.9	0.3	0.00	0.03	C37-38
Bone	3	0.2	1.0	0.9	0.03	0.07	2	0.1	0.6	0.3	0.03	0.03	C40-41
Melanoma of skin	56	3.9	19.1	12.1	0.80	1.21	51	3.8	16.0	10.7	0.71	1.02	C43
†Other skin	276		94.1	51.7	2.34	5.73	233		73.0	32.0	1.76	3.53	C44
Mesothelioma	7	0.5	2.4	1.5	0.13	0.13	5	0.4	1.6	0.6	0.00	0.06	C45
Kaposi sarcoma	10	0.7	3.4	2.3	0.14	0.27	0	0.0	0.0	0.0	0.00	0.00	C46
Connective and soft tissue	8	0.6	2.7	1.5	0.04	0.12	6	0.4	1.9	1.7	0.11	0.14	C47+C49
Breast	4	0.3	1.4	0.7	0.03	0.12	407	30.1	127.6	72.3	5.35	8.09	C50
Vulva							13	1.0	4.1	1.7	0.13	0.16	C51
Vagina							1	0.1	0.3	0.2	0.02	0.02	C52
Cervix uteri							32	2.4	10.0	6.4	0.51	0.67	C53
Corpus uteri							63	4.7	19.7	10.4	0.84	1.22	C54
Uterus unspecified							19	1.4	6.0	2.6	0.18	0.24	C55
Ovary							67	5.0	21.0	12.2	0.77	1.30	C56
Other female genital organs							7	0.5	2.2	1.2	0.07	0.14	C57
Placenta							0	0.0	0.0	0.0	0.00	0.00	C58
Penis	4	0.3	1.4	0.8	0.05	0.05							C60
Prostate	221	15.5	75.4	37.1	0.87	4.32							C61
Testis	24	1.7	8.2	6.9	0.51	0.56							C62
Other male genital organs	1	0.1	0.3	0.1	0.00	0.00							C63
Kidney	38	2.7	13.0	8.1	0.48	0.89	24	1.8	7.5	3.4	0.17	0.40	C64
Renal pelvis	1	0.1	0.3	0.2	0.03	0.03	0	0.0	0.0	0.0	0.00	0.00	C65
Ureter	4	0.3	1.4	0.9	0.09	0.13	0	0.0	0.0	0.0	0.00	0.00	C66
Bladder	89	6.2	30.4	15.9	0.36	2.01	23	1.7	7.2	3.3	0.13	0.48	C67
Other urinary organs	2	0.1	0.7	0.4	0.02	0.02	1	0.1	0.3	0.2	0.00	0.03	C68
Eye	4	0.3	1.4	2.1	0.12	0.12	2	0.1	0.6	1.0	0.04	0.07	C69
Brain, nervous system	15	1.1	5.1	3.7	0.32	0.40	21	1.6	6.6	5.9	0.46	0.52	C70-72
Thyroid	8	0.6	2.7	1.7	0.09	0.23	26	1.9	8.1	4.9	0.33	0.55	C73
Adrenal gland	3	0.2	1.0	0.7	0.05	0.09	1	0.1	0.3	0.3	0.02	0.02	C74
Other endocrine	1	0.1	0.3	0.6	0.03	0.03	0	0.0	0.0	0.0	0.00	0.00	C75
Hodgkin disease	9	0.6	3.1	2.4	0.15	0.15	9	0.7	2.8	3.0	0.19	0.19	C81
Non-Hodgkin lymphoma	76	5.3	25.9	16.3	1.05	1.95	77	5.7	24.1	12.9	0.81	1.37	C82-85, C96
Immunoproliferative diseases	1	0.1	0.3	0.1	0.00	0.00	2	0.1	0.6	0.2	0.00	0.03	C88
Multiple myeloma	16	1.1	5.5	3.3	0.18	0.44	23	1.7	7.2	2.5	0.05	0.24	C90
Lymphoid leukaemia	11	0.8	3.8	2.7	0.13	0.35	9	0.7	2.8	1.7	0.10	0.19	C91
Myeloid leukaemia	17	1.2	5.8	3.3	0.21	0.32	14	1.0	4.4	2.1	0.10	0.29	C92-94
Leukaemia unspecified	1	0.1	0.3	0.2	0.03	0.03	3	0.2	0.9	0.6	0.05	0.08	C95
Other and unspecified	42	2.9	14.3	7.4	0.24	0.83	36	2.7	11.3	3.5	0.17	0.34	O&U
All sites	1704		581.2	335.0	16.26	40.00	1583		496.1	254.7	16.15	28.62	ALL
All sites but C44	1428	100.0	487.1	283.3	13.92	34.27	1350	100.0	423.1	222.7	14.39	25.09	ALLbC44

†See note following population pyramid