

Central and South America



Argentina, Bahia Blanca

Registration area

The Regional Tumor Registry of the South of the Province of Buenos Aires covers an area corresponding to 15 political areas, with a population of 627 505 inhabitants in 2001. The data presented are for the political area of Bahia Blanca (population 284 776) only.

Bahia Blanca is mainly an urban area, with a large petrochemical industry. The remainder of the population lives in small rural villages.

Practically 100% of the population is white, most of them descended from European immigrants who arrived during the late 19th and early 20th centuries. In some political areas, such as Coronel Suarez, there are settlements of German descendants. In the south of the province, there is a varying population of workers who come from Chile for the onion harvest, but the permanent Chilean population amounts to less than 5%. The predominant religion is Catholic, but there are also other Christian minorities.

Cancer care facilities

The two public hospitals of the area have oncology services. Surgery is performed in the general surgical services. There are two private radiotherapy institutes, which also treat patients from public hospitals; one has a linear accelerator. Computerised tomography is available in almost all of the larger public and private institutions, and one of them has a nuclear magnetic resonance imaging facility.

Registry structure and methods

Although the registry was recognised by Provincial law and a municipal resolution in 1993, it still does not have a specific budget. It is based in the Dr. Jose Penna General Hospital and its Director has been appointed Chief of the Biomedical Investigation Unit, but no specific personnel or funds have been assigned. The Argentinean Association for Education and Prevention of Cancer, a non-profit organization founded in 1986 to improve cancer control, maintains the registry and other high-priority activities of the Association, such as the Tobacco Control Programme. Although its resources are limited, it is able to pay for a registrar, and has provided small fellowships for training young students. Some support

has been received from IARC. The foundation Alberto J. Roemmers provided funds for epidemiological research in 2000–2001, and the National Ministry of Health in 2004.

Data collection is mainly active. The sources of cancer cases are public, private and military hospitals, as well as pathology laboratories and a flux cytometry laboratory. We also visit Radiotherapy Institutes and haematology doctor's offices.

Data management is carried out using the IARC/IACR CanReg software.

Interpreting the results

There have been few changes in the population since the establishment of the Registry. The Registry has more information sources for this period compared to in 1989–92 and 1993–1997, so the data are now more complete.

There are no organised screening programmes within the region. PSA is used more frequently, but it is not possible to determine the proportion of the male adult population screened.

Use of the data

Reporting of incidence is considered the most important activity of the registry, as population-based cancer registration is so limited in the country.

In combination with the registry, the Epidemiological Investigation Unit on Cancer performs some tobacco control activities.

During the last three years we have been consulted at the national and provincial levels to develop new cancer registries, and we have trained professionals and technicians in the provinces of La Pampa and Jujuy, where new cancer registries have recently been established.

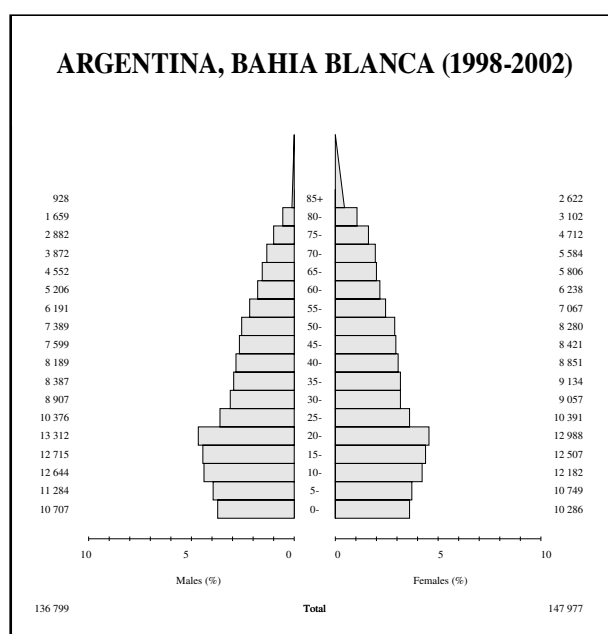
The registry is currently involved in epidemiological research, and policymakers use our data for planning and evaluation of health services.

Source of population

The estimate of the population-at-risk is based on the 2001 Census.

Multiple primary rules used

IACR rules (2004) on CI5 IX period.



Brazil, Brasilia

Registration area

The PBCR Federal District (DF) covers the capital city, in the Mid-West region of Brazil. It is located between 15°30' and 16°03' South latitude and 47°25' and 48°12' West longitude, covers an area of 5 789.16 km², with 255.25 km² being urban and 5533.91 km² being rural. The climate includes tropical savannas and temperate rainy areas with dry winters; annual average temperature is 20.5°C (69F) with average air humidity varying between 39 to 83%, being lowest in August and September and highest in December. The altitude is between 1000 and 1152 meters above sea level.

The last demographic census carried out in 2000 by the Brazilian Institute of Geography and Statistics (IBGE) disclosed that in the DF, the resident population was 2 139 580 inhabitants (1 069 790 women and 981 356 men), distributed in 28 Administrative Regions, with 4.2% (89 647) in the rural area. The vast majority of the population is Catholic.

Interpreting the data

The life expectancy for those born in 2000 was of 69.24 years. Currently, the Federal District as well as the whole country is experiencing rapid and expansive demographic change, with an aging population and consequent increase in the chronic degenerative illnesses reflected in mortality statistics. In 2002, cardiovascular illness was the most frequent cause of death in the DF, representing 27.7% of all deaths, followed by cancer (16.6%). In 1979 cancer was responsible for 9.4% of the deaths in the DF; therefore, from 1979 to 2002 cancer mortality increased by 76%. The Ministry of Health (MS) has been publishing data on causes of mortality in Brazilian capitals since 1944. In 1975, the MS implemented the Subsystem of Information of Mortality (SIM), defining the national model of death certification and centralising the processing and annual publication of these data. The quality of information in the DF is partially attributed to low levels of unclear causes of mortality (0.8–5%) in the last five years, the lowest rate among states of the federation. A study carried out in 130 480 deaths in the DF from 1979–1988 disclosed that 16 098 deaths had cancer as the primary cause; 41.3% of the deaths had been verified through autopsies. However, in the deaths caused by cancer, only 12.2% were submitted to necropsy; the younger the patient the higher the number of autopsies. Thus, the fewest autopsies were performed in patients over 74 years old.

Cancer care facilities

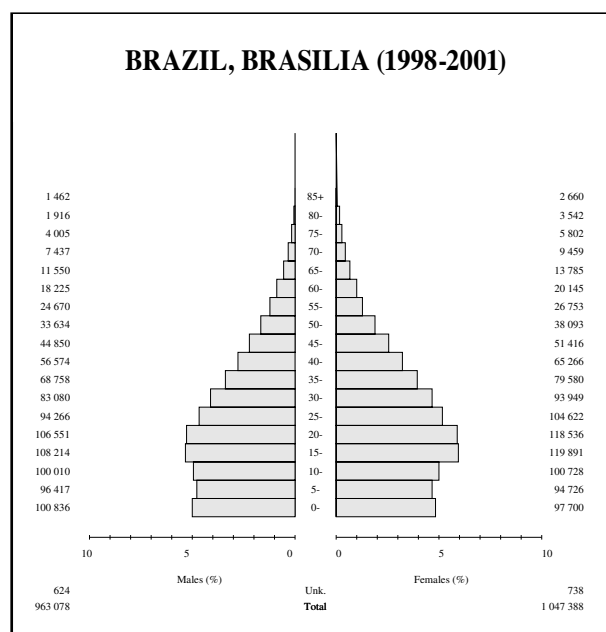
In 2002 the DF had 60 hospitals: 14 state-provided, 5 federal and 41 private. Early Detection programs are available in basic care units (68 Health Centres and Units with Family Health Program - PSF), and in the regional referral units (10 Regional Hospitals). The Federal District has High Complexity Centres of Cancer Treatment (CACON) at 3 hospitals.

Registry structure and methods

The Epidemiology and Regulation Management coordinates the Population-Based Cancer Registry in the DF and supervises, assesses and monitors the hospital-based cancer registries in this district. In the DF there is a Skin Cancer Registry that assesses skin cancer cases diagnosed in the public health system.

The PBCR of the Federal District registers all the cases of cancer (invasive and *in situ*) and benign CNS tumours (in children and adolescents under 19 years old) diagnosed in the DF resident population. Cancer is not a notifiable disease. The main sources of data collection are located in pathology labs, health information systems, hospitals and private oncology clinics.

The PBCR initiated its activities on 27 November 1997 and follows the rules of the National Institute of Cancer/Brazil (INCA). It uses SISBASEPOP/INCA software and it has published data referring to the years 1996–2001.



Use of the data

The Cancer Registry works in cooperation with Cancer Care Coordination, which is responsible for planning, evaluating and executing the Oncological Plan for the DF. The structure of the coordination includes Care Delivery Management, Primary Prevention Management, Early Detection Management, Epidemiology and Regulation Management, Financial and Human Resources Management, Palliative Care Management, and Evaluation, Teaching and Research Management. It is responsible for planning and coordinating health promotion, prevention and care activities in the district.

Source of population

Census 2000, 1998, 1999, 2001, 2002 estimated by Brazilian Institute of Geography and Statistics (IBGE/DATASUS).

Multiple primary rules used

IACR rules (2004) on CI5 IX period.

Brazil, Cuiaba

Registration area

The PBCR of Cuiabá covers the cities of Cuiabá and Várzea Grande, in the Midwest region of Brazil. Cuiabá and Várzea Grande have a total area of 4482 Km². About 98.44% of the population (some 686,481 inhabitants) lives in urban areas, and the annual growth rate is 2.72% for Cuiabá and 2.66% for Várzea Grande.

The city of Cuiabá is 177 meters above sea level, and Várzea Grande, 191 meters. The climate is continental tropical, with a mean annual temperature of 33°C.

Cancer care facilities

The State Cancer Control and Prevention Coordination of the State Health Secretariat of Mato Grosso has been working to meet the needs for those who work in the field of oncology, supporting prevention and delivery of care actions, research and epidemiological studies.

Health programs and services are provided by 4 public hospitals and 1 private hospital, with 162 public beds (2.3 per 1000 inhabitants). There are also healthcare units with cancer prevention and early detection facilities. Other cancer diagnostic and treatment facilities include: two radiation therapy clinics, 5 chemotherapy clinics, and 10 pathology labs. There are 22 universities, 3 of which have medical schools.

Registry structure and methods

The PBCR was established in 1999, and data collection started in the year 2000. It is located in the Health Care Department of the State Health Secretariat of Mato Grosso, and has fixed funding.

The registry staff includes a coordinator, a supervisor and 3 registrars. The advisory committee includes an epidemiologist, a pathologist and an oncologist.

Data are actively collected from 25 sources: one specialised hospital, two university hospitals, one general hospital, 10 pathology labs, one hematology clinic, two oncology clinics, two radiation therapy clinics, and 6 chemotherapy clinics. Information on deaths is retrieved from the Mortality Information System (SIM).

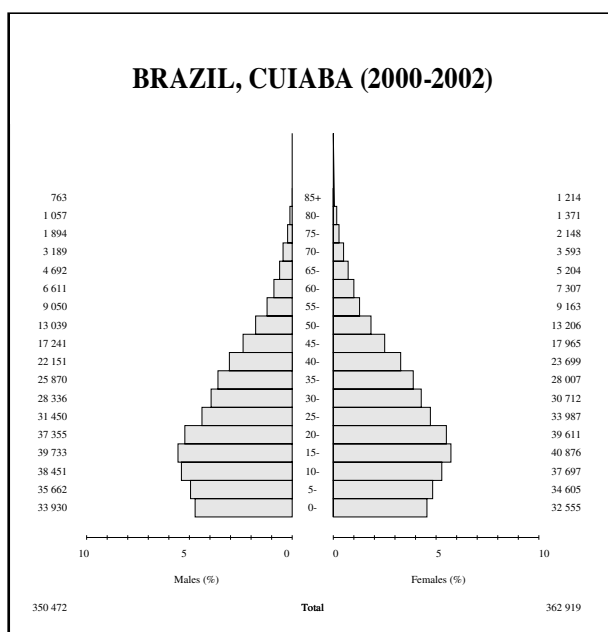
Use of the data

In addition to determining cancer incidence and geographic distribution in the city of Cuiabá, the information has been used to study temporal trends, to provide access to screening programs, to collect data for epidemiological studies, to provide resources for teaching and delivery of lectures, and to support cancer prevention and care actions.

Source of population

2001 and 2002, estimates. 2000: census. Estimated by Brazilian Institute of Geography and Statistics (IBGE) Official Bureau (www.ibge.gov.br).

Multiple primary rules used
IACR rules (1990).



Brazil, Goiânia

Registration area

The Cancer Registry of Goiânia is a population-based cancer registry that covers an area of 739 Km². The city is a part of the central plateau in Brazil. The local altitude is 800 meters, at latitude 16° 40" and longitude 49° 15". The climate is tropical and the city is hot and sunny almost all year. The average annual temperature is 10–30°C. The humidity averages 43% during the winter and 74% during the summer. Two rivers, João Leite and Meia Ponte, cross the city and provide its water. Goiânia, the second planned city in Brasil, is now 72 years old.

The majority of the population comes from rural areas. In the last ten years, the population migrating to the city is decreasing, because agricultural industries are increasing in the rural areas. The ethnic composition is primarily mulattos and whites, with a few blacks. The main religion is Catholic but the number of evangelicals is increasing.

Cancer care facilities

We have one Cancer Hospital founded 50 years ago, which provides 180 beds, chemotherapy, 4 radiotherapy machines, surgery, and chemotherapy, as well as bone marrow transplantation since 2000. There are 5 private clinics also doing chemotherapy. The cancer centre also provides cancer training courses in surgery, radiotherapy and chemotherapy.

Registry structure and methods

The registry is located in the Cancer Hospital. Financial support comes from the Associação de Combate ao Câncer em Goiás (ACCG).

The registry is coordinated by an oncologist. Four people collect data and there is one to code. There is

also an Advisory Council comprising seven specialists in oncology.

Data collection is active and no precoded data are received. The main sources of information are the Cancer Hospital, outpatient cancer clinics, histopathology laboratories and the University Hospital. The registry has access to death certificates, which include identifying information. Cancer is not a notifiable disease.

Quality control procedures include verification of date of birth versus topography, sex versus topography and morphology, etc. Analyses of incidence and mortality being evaluated include: cervix cancer, breast cancer, and prostate cancer. We also carry out studies on survival of cervix cancer, breast cancer, colon cancer, larynx, mouth, oesophagus and cutaneous melanoma.

Interpreting the results

There are screening programmes for detection of breast, skin and prostate cancer. PSA testing is not common.

Use of the data

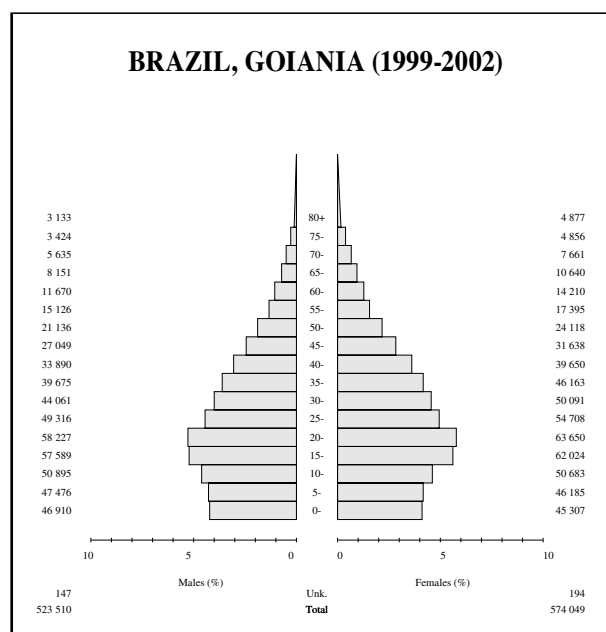
Data on incidence are reported to the providers of information to the registry, and the registry collaborates with postgraduate students doing theses. Research is being carried out on cancer of the oral cavity, larynx and oesophagus in a collaborative study.

Source of population

Estimated by the Brazilian Institute of Geography and Statistics (IBGE) Official Bureau (www.ibge.gov.br).

Multiple primary rules used

IACR rules (2004) on CI5 IX period.



Brazil, São Paulo

Registration Area

The São Paulo Cancer Registry covers the resident population of the city of São Paulo, capital of the State of São Paulo, located in the Brazilian Southeast Administrative Region. The population data is based in the most recent Census (2000), and it includes more than 10 million people, mostly urban (almost 99%) and formed by migrants of many nationalities (Italians, Portuguese, Spanish, Japanese, Germans, etc.). A high percentage of the population is Catholic.

Cancer care facilities

General health care is provided by the local and state health services departments through the district health centres and hospitals, supplemented by private practitioners and covered by insurance. Regarding cancer, São Paulo has many hospitals, radiotherapy and chemotherapy services and pathology laboratories.

Registry structure and methods

The Registry belongs to the Department of Epidemiology of the School of Public Health of the University of São Paulo, one of the five preeminent Brazilian universities.

The financial support is provided at all three government levels (local, state and federal resources). A coordinator (a cancer surgeon physician), 8 data collectors, and three informatics processors compose the administrative framework. There is also a Scientific Commission that provides epidemiological, statistical and pathology assistance.

Although cancer is not considered a notifiable disease, the methods of data collection are mixed; some hospitals have active notifications (spontaneously) of newly diagnosed cases, and others have passive notifications. The main data sources (380 units) are hospitals (some are cancer hospitals) and pathology laboratories.

A special study of survival of cervix cancer and breast cancer in young women illustrated the very good completeness and accuracy of the information recorded in the registry.

Interpreting the results

There are breast and cervix cancer screening programmes in the area covered, and PSA testing is also common.

Use of the data

Annual reports on cancer incidence and mortality are prepared highlighting trends and changes. Some special survival studies (cancer in childhood and cervix cancer) have been carried out.

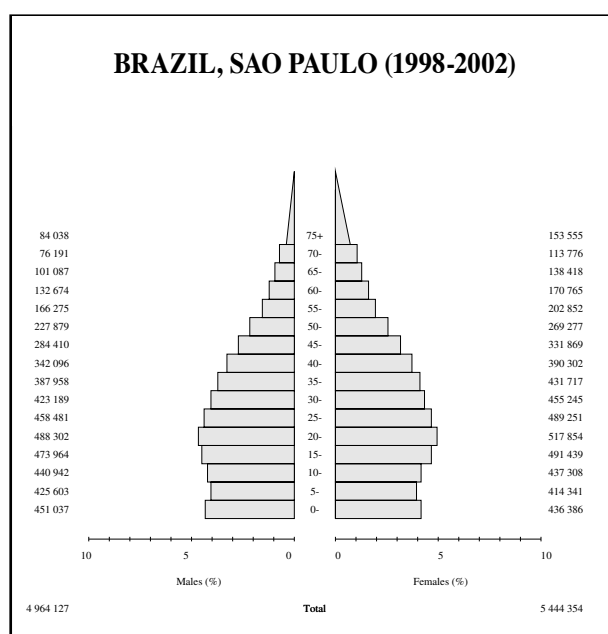
Many graduate students use the registry data bank for their PhD theses or Masters Degree dissertations; the local health authorities use it as well.

Source of population

Census 2000. 1998, 1999, 2001, 2002 estimated by Foundation Seade (Official Institucion For Population Statistics In The State Of Sao Paulo).

Multiple primary rules used

IACR rules (2004) on CI5 IX period.



Chile, Valdivia

Registration area

Valdivia's registry area corresponds to Valdivia province, which is divided into 12 districts, located in the 10th region in the south of Chile. The total population of the province, based on the last 2002 census, is 356 396 inhabitants, with a male:female ratio of 1:1; the rural population reaches 38%. Some 70% of the population is in the public health system.

According to the 2002 national census, among the population over 15 years old in Valdivia province 62.5% are Catholic, with 24.5% evangelicals, 7.8% atheists and 5.2% other religions. Ethnic groups comprise 11.4%; the indigenous Mapuche represent 99.1% of these.

Cancer care facilities

The health care network of Valdivia province is mainly public. It comprises 16 primary care centers and 8 public general hospitals, which refer their patients with presumed oncological diseases to Valdivia Regional Clinical Hospital. This is the only oncology centre of the registry area, and it also provides teaching and health services in coalition with the Universidad Austral de Chile.

This core hospital has a pathology laboratory and provides surgical, radiotherapy and chemotherapy treatments. The child radiotherapy treatment facility is the only one in our region.

Registry structure and methods

The population cancer registry is in the Epidemiology Unit Office of Valdivia Province, which is part of the Regional Health Authority of the 10th region, a dependent unit of the Undersecretary of Public Health of the Health Ministry.

It receives technical support from the oncology committee of Valdivia Regional Clinical Hospital and it has one nutrition professional with 33-hour week and two physicians part-time, all with master's degrees in public health.

The registry uses six information sources, passively receiving weekly notifications from the pathology laboratory of the Valdivia Regional Clinical Hospital and actively reviewing all of the clinical records of previous week's patients discharged with cancer diagnosis, both from the Regional Hospital of Valdivia and from the private centres. Also, all cases that enter through particular units and programs are reviewed: Hematology, National Program for Cancer Medication (drugs) and Pain Control Program. The registry also has access to review all of the province's death certificates and the data kept by the Statistical Departments of the Chilean Health Ministry.

We use the CanReg program to register the basic variables defined for the population cancer registries of Chile. The quality standards used are: Percentage of cases with microscopic confirmation; Percentage of cases with death certificate only; Percentage of cases registered without age; and Ratio mortality/Incidence. Cases are maintained confidentially, preserving the patients' individual information.

Interpreting the results

It is not possible to estimate the proportion of cases of Valdivia residents who choose to continue study or seek treatment in another province, but it is considered to be low as Valdivia Regional Clinical Hospital is the referral centre for the southern area of the country.

Data are evaluated by checking different data sources and their validity, as well as the coding system and correct computational support and quality standards. We apply the IARC Check program once a year in order to find and correct any errors.

There are national programs of early detection for cancer of the cervix (Pap smear) and breast (physical exam and breast x-ray in high risk group). There is no national program of PSA testing; it is usually requested in patients with benign prostate hyperplasia, and sometimes requested in preventive medicine.

No environmental changes that would affect cancer incidence have been registered during the

study period, but in 2004 a cellulose factory began operating.

Use of the data

The registry has prepared incidence reports for publication in the epidemiology bulletin *El Vigia* from the Health Ministry, and which are available on the Ministry's web site. Last year we completed specific survival studies in gastric and gall bladder cancer; these were provided to the groups in charge of the protocols for both diseases in the Health Ministry.

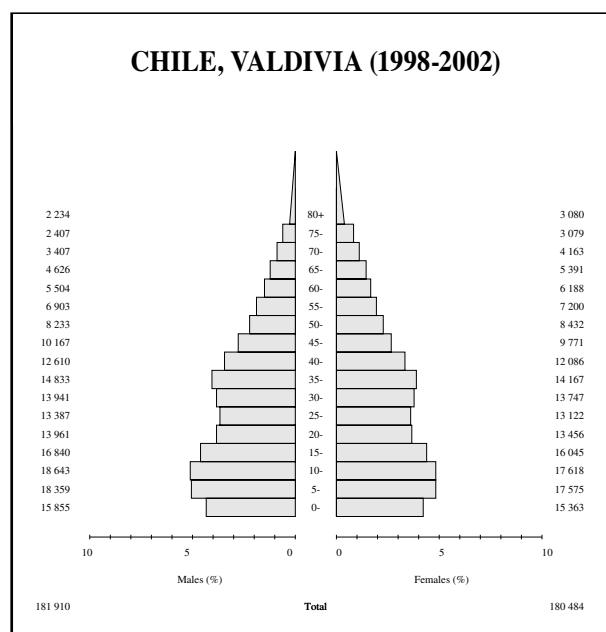
Registry information was also used in planning modernisation and enlargement projects for the oncology service at Valdivia Regional Hospital.

Source of population

The National Statistics Institute makes a national population census every 10 years, the last of which was in 2002. This provides a projection of the population for each region, province and commune.

Multiple primary rules used

IACR rules (2004) on CI5 IX period.



Colombia, Cali

Registration area

The Registry, in operation since 1962, is limited to the urban area of the city of Cali. Cali is the capital of the Department of Valle, one of Colombia's 32 departments. The department is located in the south-west of Colombia on the Pacific Ocean. Cali is situated 1000m above sea level between the Cauca river to the east and the chain of the Andes to the west, at latitude 3°27' N and longitude 7°31' W. The average temperature is 24°C. The urban registration area of the registry is 120.9 km². The population at the most recent census (2005) was 2 030 000. The great majority of the population are Mestizos (a mixture of Spanish and Indian) with a minority of blacks and whites. More than half of the population are migrants from other areas of Colombia, and in lesser part from other countries. The major part of the population is Catholic. The official language is Spanish.

Cancer care facilities

The Colombian Social Security System reformed in 1993, creating two healthcare systems, one for those who can afford to pay for health care and one for those who cannot. Because the subsidised healthcare system does not have the capacity to meet demand, a third system has developed for those who are "linked" to the subsidised health care system but are not part of it. Those who are "linked" receive a document attesting to their status, and they can receive emergency care. Health services management and delivery are decentralised to strengthen the role of departments and municipalities, the private sector is incorporated within the insurance and health services delivery functions, and basic health services are free and compulsory.

A basic network of health centres has been planned for the entire urban territory, and programmes of primary care and prevention have been promoted. About 60% of the cancer patients diagnosed in Cali are treated at Valle University Hospital, a public general hospital with a total of 630 beds. A hospital-based cancer registry was established in 1986, a team for the management of childhood cancer began activities in 1989, and a formal oncology department was initiated at the end of the 1990s. The hospital also maintains radio- and chemotherapy facilities. Other facilities for cancer diagnosis and treatment include four major non-university hospitals, cytopathology and haematology laboratories, and radiotherapy and chemotherapy centres.

Registry structure and methods

The registry is located in the Department of Pathology of the Medical School in the Universidad del Valle. The staff includes a Director, who is the Professor of Pathology, three assessing pathologists, a statistician coordinator, three record

clerks and a secretary. Once a year, a group of specially trained medical students is selected to carry out a field survey of files of all private physicians who diagnose or treat cancer patients. The registry staff and part of the operating cost are covered by de Universidad del Valle. Most of the operating costs are obtained from foundations and specific grants for each activity.

The CCR registry uses active case finding from 57 sources of data, including cancer hospitals, general hospitals, teaching hospitals and 32 pathology laboratories. The information from death certificates is obtained from the Municipal Office of Vital Statistics to check against cancer registration. The death registration system is very adequate and complete, and

the cause of death is always noted. The registry staff visit these sources, where they scrutinise the records kept in medical records departments, and registers of individual departments concerned with diagnosis and treatment of cancers, to identify and abstract information on cases of cancer, diagnosed by all methods, among residents of the registry region. The data concerning each case are registered on a special form at the source site. They are classified and revised at the registry office, and the information is entered into a computer database for checking for duplicates, errors and inconsistencies. Difficult cases are discussed by the staff and resolved either by the registry director

or by revisiting the source and sometimes reviewing the microscopic slides. No active follow-up is carried out.

Use of the data

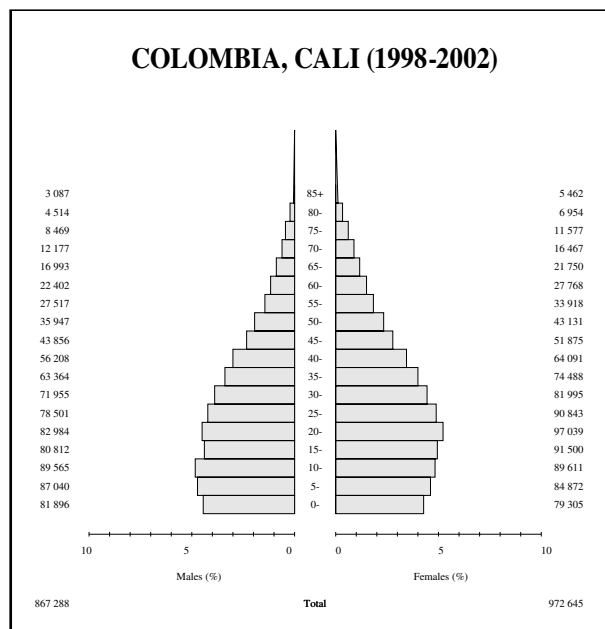
The population-based cancer registry of Cali has been studying incidence and mortality trends in the city for the period 1962–2001 using the age-period-cohort model. A long-term analysis of survival of uterine cervix cancer is underway.

A brochure that contains information on CCR activities and incidence and trends in Cali was issued by CCR and distributed to physicians and Health Services. The Cali Cancer Registry is pleased to provide cancer statistics through this Web page: <http://rpcc.univalle.edu.co>.

Source of population

Intercensal estimates of the resident population by age and sex for each year 1997, 1998, 1999, 2000, 2001 and 2002. The intercensal estimates were obtained by exponential interpolation from the census counts of 1993 and 2005.

Multiple primary rules used IACR rules (2000)



Costa Rica

Registration area

Costa Rica covers an area of 51 100 km². At the 2000 census the population was 3 810 179 (1 902 614 males and 1 907 565 females), of whom 59% lived in cities and 41% in rural areas. The official religion is Roman Catholic. The main ethnic group is Caucasian-Native, and there are smaller proportions of Blacks, Natives, Chinese and Caucasian-Black.

Cancer care facilities

The country has a national health care system and good-quality vital statistics. The National Social Security system covers more than 90% of the population. The remaining 10% are attended by private health services. Social Security is organized in 3 levels: patients with suspected cancer are referred to the 2nd and 3rd levels (specialised). The Social Security system is made up of 29 hospitals; 5 of them have an Oncology Department. Only 2 hospitals have radiotherapy departments, and there are 2 private radiotherapy centres.

Registry structure and methods

The Costa Rica National Tumour Registry was founded in December 1976 by Executive Decree and started functioning in 1977, but nationwide coverage was achieved only in 1980. The aims were to collect data about cancer incidence and prevalence regarding age, sex, cancer site and geographical distribution within the country.

The registry occupies a section of the Statistics Department of the Ministry of Health, which provides all financial support. One physician, a medical registry technician and two statistical assistants are dedicated full time to the registry. Several medical registry technicians of the Statistics Department collaborate with the registry obtaining information on incomplete cases at the hospitals and clinics and during the death clearance process.

The sources of information for the registry are the compulsory notification sheets on patients leaving hospital, biopsy and autopsy reports with a diagnosis of cancer from all pathology services (public and private), and death certificates mentioning cancer from the National Institute of Statistics and Census.

Except for death certificates, which must be retrieved by the staff, data collection and case follow-up are passive. Death registration is complete, as it is compulsory to show a death certificate before burial. All death certificates mentioning cancer undergo a clearance process within the hospitals

of the healthcare system, after which they are classified as DCN or DCO cases or are discarded.

The registry is fully computerised, and each report sheet is checked against the Civil Registry database to determine if the report concerns a Costa Rican. For nationals the personal identification number, name and date of birth or death are verified. Foreigners are included and coded as such in the ID variable; there is a special code for cases of uncertain origin. Reports are then linked to the registry database, using software specially designed to find duplicates, to classify the case as incident or not. Each primary tumour case is given a unique identifying registry number, which is included in the registry database. Several consistency check edits are carried

out during data entry, including date of birth/incidence date/date of death, sex/site, age/site, age/histology, and site/histology. Multiple primaries are registered according to the IARC rules.

Follow-up of cases is mostly passive, although every four years an update of death dates is conducted with the Civil Registry.

Interpreting the results

Although no study has been made to evaluate the registry's completeness of coverage, under-registration is estimated to be low given the characteristics of the health system and the vital statistics.

Cases with a cytological diagnosis are accepted when localized in specific sites such as lung and cervix.

The country has made important efforts to establish early cancer detection programmes, especially for cervix, breast, stomach, colon, prostate and skin cancers.

Use of the data

The registry information is used in cancer control decision-making at several levels, and also has been used in various studies regarding occupational exposure cohorts and the risk of cancer during recent years, as well as in descriptive and survival studies.

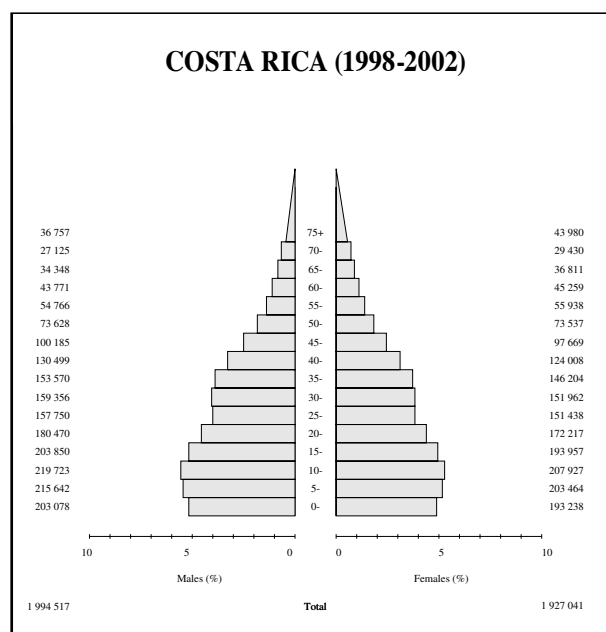
The country will soon reinforce the Cancer National Health Care Network as part of the recently-defined National Cancer Plan. As cancer is the second cause of mortality in the country, it is considered a principal public health problem.

Source of population

The estimated annual populations were based on the censuses of 1984 and 2000.

Multiple primary rules used

IACR rules (2000) on CI5 IX period



Ecuador, Quito

Registration area

The National Cancer Registry covers the population living in the city of Quito, the capital of the Republic of Ecuador, situated at 2810m above sea level, in the Andes Cordillera. The city is surrounded by mountains and the average temperature is 17°C.

The average annual growth rate of the population is 2%, which includes a large number of immigrants from rural areas and migrants to migrants to other countries. Most of the population are mestizos (mixed race), and the main religion is Catholic. The literacy rate is 97% of the population; 39% have received primary school education and 23% higher studies.

Cancer care facilities

The healthcare facilities in the city comprise nine general hospitals, relying on the Social Security system and the Ministry of Health, two private hospitals and 30 private clinics. The largest hospital belongs to the Social Security system and has 700 beds used by affiliated workers. The private clinics have between 20 and 80 beds. There is a new modern oncological hospital with 160 beds, which belongs to the Fight Against Cancer Association (Lucha contra el Cáncer, or SOLCA). A full range of diagnostic facilities and treatment by surgery, chemotherapy and radiotherapy are available. According to registry data 34% of patients are diagnosed in the private sector.

Registry structure and methods

The National Cancer Registry of Ecuador was created in 1984, with the initial collaboration of PAHO/WHO, by a ministerial decree in which SOLCA was declared responsible for the funding and administration of the registry. The registry has a Steering Committee directed by the President of the Association.

The personnel of the registry comprises a Director, two epidemiologists and four full-time registrars including one responsible for the computer system. The Director is a medical pathologist and establishes the registry procedures, coordinates the general activities of the registry and is responsible for inter-institute relationships. The epidemiologists coordinate personnel activities, control data quality and set up and facilitate studies, particularly between physicians in SOLCA.

Data collection is active, and the main data sources are pathology and haematology records, from both the public

and the private sectors, and clinical records of public and private hospitals. Registrars also contact many physicians who treat cancer patients in the private sector.

The 53 pathologists in the city collaborate voluntarily and enthusiastically in the work of the registry, allowing the registrars to consult their records and in many cases filling out a part of the notification form themselves.

Other sources of information are the death certificates and hospital discharge lists collected by the Institute of Statistics and Census of Ecuador (Instituto de Estadísticas y Censos del Ecuador, or INEC). Follow-up is passive and consists of matching death certificates with the cases registered.

The registry has promoted the creation of cancer registries in other cities in the country, and is monitoring their activities; there are now registries in the cities of Guayaquil, Cuenca, Portoviejo, Loja, and Machala, and a gastric cancer registry in the province of Tungurahua.

Interpreting the results

The National Cancer Registry publishes data in an annual report that is distributed within the country and abroad. The 1999–2002 report shows a significant improvement in the quality of the data. Data on 73 651 cases, 48% of whom were residents of Quito, were received in the registry between 1985–2003.

In the last three years a screening programme for cervical cancer has been undertaken with great

enthusiasm. It is supported by WHO, and the registry provides the baseline data to monitor results.

Use of the data

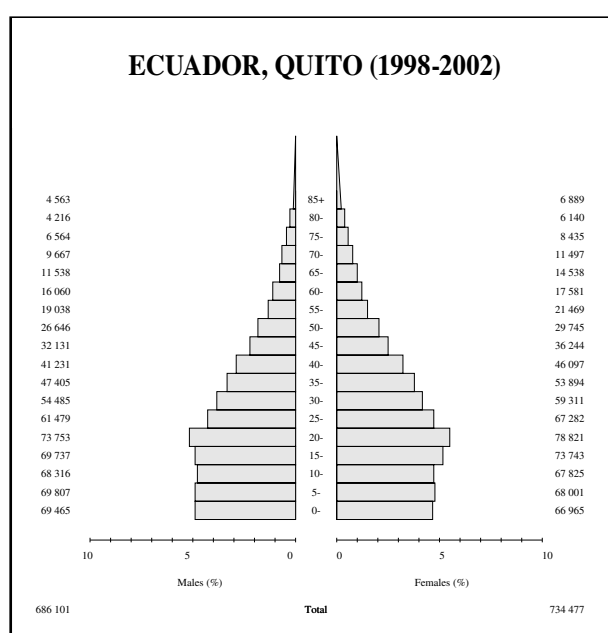
The registry has carried out a number of studies on the epidemiology of selected cancer sites and on quality control, and results have been published locally or internationally. The majority of the scientific research on cancer carried out in the city and in much of the country uses the data from the registry.

Source of population

2001 Census, corrected for non-response rate and for migration. Instituto Nacional de Estadística y Censos INEC. Proyecciones de Población por provincias, cantones, áreas, sexo y grupos de edad. Serie 01 Nro 206. Quito. Agosto 2004.

Multiple primary rules used

IACR rules (2004) on CI5 IX period.



France, Martinique

Registration area

Martinique, a French overseas department, is a 1100 km² island located between the Caribbean sea and the Atlantic ocean. The department is divided into 34 administrative areas called communes (municipalities).

In the 1999 census, 381 500 inhabitants were living on the island; 57% of people aged >65 years were women. The ethnic distribution was: African or African/white/Indian mixture 90%, white 5%, and East Indian, Lebanese, and Chinese less than 5% each. Immigrants made up about 1% of Martinique inhabitants.

Cancer care facilities

The population is served by 9 public hospitals, including the University Hospital of Fort-de-France. The medical infrastructure in Martinique is almost entirely located in Fort de France: the University Hospital, which comprises the radiotherapy-oncology service, the nuclear medicine service, the haematological and pathological laboratories, the clinical haematology service and department of medical information, two private clinics and one laboratory. Eight other municipal hospitals contribute to diagnosis and treatment of cancer. Medical care is free of charge, allowing unrestricted access to high-quality medical services for all cancer patients registered in regional health insurance files.

Registry structure and methods

Cancer registration has been mandatory in Martinique since 1981, with the Association Martiniquaise pour la Recherche Epidemiologique en Cancérologie (AMREC) being officially created in 1986. The Registry has been integrated into the CHU de Fort de France since 2003. In France, the Registry is integrated into the National Cancer Registry Association (France Cancer Incidence Monitoring, or FRANCIM).

Cancer cases are identified using common sources of information: medical evacuation files, data from private and public hospitals, laboratory files, regional insurance records

of the national public medical insurance system. Cases are also declared spontaneously by doctors or by active collection. Letters are sent regularly to all private and public cancer treatment structures. Cancer diagnoses are verified using private and public laboratories of pathology. Cancer cases are only kept for people living in Martinique at the time of diagnosis. The registry is staffed by a full-time medical officer, a full-time registrar and one full-time health worker.

Interpreting the results

In the last decade cancer has become a high public health concern in Martinique. It is the second leading cause of death in men and in women. Several tumours—prostate, breast, colon

and rectum, non-Hodgkin's lymphoma—are increasing in the general population. The way of life in Martinique has been changing considerably over the past 20 years. The socio-economic status is now among the highest the Caribbean area, and Martinique's way of life tends to be "westernised" because of constant exchange with metropolitan France. Other characteristics include a highly mixed population, low tobacco consumption and, in most areas, replacement of traditional diet by imported food. Changes in a common set of exposures (lifestyle modification, life expectancy) and improved diagnostic procedures, earlier detection (use of the PSA test, mammography, the Hemocult test and an organised cervical cancer screening programme

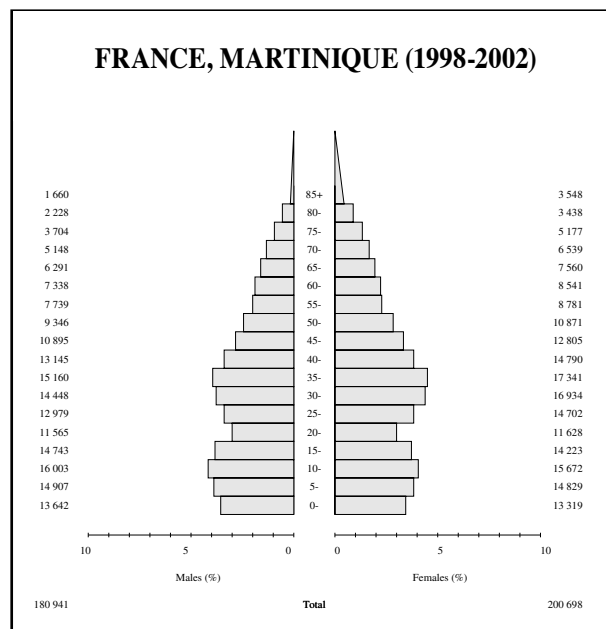
in Martinique since 1991) have been suggested to explain these trends.

Use of the data

The registry provides a five-year report of cancer incidence, highlighting trends and changes. Data are also use for evaluation of cancer screening, medical practices and environmental risk assessment. Survival studies for prostate and colorectal cancer patients have also been carried out.

Multiple primary rules used

IACR rules (2004) on historical data.



Peru, Trujillo

Registration area

The Trujillo Cancer Registry covers the population of five districts (Trujillo, La Esperanza, El Porvenir, Florencia de Mora and Víctor Larco). They represent Metropolitan Trujillo, on the north coast of Perú. The population at the most recent census (1993) was 513 223. About 96% of the population live in urban areas; 90% are Roman Catholics

Cancer care facilities

Diagnostic and treatment facilities are provided by the Ministry of Health (MINSA) and the Social Security (EsSALUD) hospitals, supplemented by private clinics. Radiotherapy is supplied by one telecobalt unit and radium devices at Belén Hospital.

Registry structure and methods

Financial and technical assistance are received from IARC under a Collaborative Agreement with the National University of Trujillo. The Central Office of the Registry is at Belén Hospital. The Registry is staffed by a pathologist (head of the Registry), one statistician pathologist, one computer analyst and one part-time statistical technician.

Data are collected actively from three general hospitals, the radiotherapy service, and private clinics, pathology laboratories and oncologists. Mortality data are obtained from the original death certificates furnished by the Regional Health Authority. The Registry staff scrutinise the death certificates to complete the database records or to follow up. The Registry members visit the sources to screen the hospital discharge notes and scrutinise the cancer medical records to abstract the required information onto special forms. Data from patients referred to the National Cancer Hospital (Instituto Nacional de Enfermedades Neoplásicas) in Lima are also recorded.

A formal evaluation of the completeness or accuracy has not been accomplished for the 1998–2002 period, but quality data are available.

Interpreting the results

The high incidence of cervical cancer is probably results from the cervical screening programmes implemented by MINSA, EsSALUD and the Trujillo Cancer Prevention League. Breast cancer detection is limited, and PSA screening has not been established.

Transformative industries (agro-industrial, leather, metalmechanic) are located in the suburban areas of the region. Trujillo has a high proportion of motor vehicles, but results of official CO testing are within acceptable limits. The relatively high cost of cigarettes probably explains the low lung cancer incidence.

Use of the data

Every five years a cancer incidence and mortality report is published and delivered to the health authorities, universities and medical institutions. The Registry has also carried out cervical cancer survival and childhood cancer research. Registry data have also been used for university theses and in planning for the Northern Cancer Hospital.

Source of population

The population data were estimated by linear interpolation on the basis of the 1981 National Census and the 1993 National

Census. The projection was made by age group for each sex.

Multiple primary rules used

IACR rules (2000).

Notes on the data

The Editors recommend that some care be taken in the interpretation of these data; see Chapter 5 (Categorisation).

